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<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

## Filing at a Glance

Company:	Massachusetts Mutual Life Insurance Company
Product Name:	Long-Term Care
State:	Virginia
TOI:	LTC03I Individual Long Term Care
Sub-TOI:	LTC03I.001 Qualified
Filing Type:	Form/Rate
Date Submitted:	08/30/2018
SERFF Tr Num:	MILL-131569310
SERFF Status:	Closed-Approved and Filed
State Tr Num:	MILL-131569310
State Status:	Approved & Filed
Co Tr Num:	MASSMUTUAL
Effective	On Approval
Date Requested:	
Author(s):	Andrea Steffan, Shawn Stender, Alex Moore, Jack Bridges, Dexter Mosley, Cassi Noel, Megan Anderson, Rylee Sevigny, Lola Heimlich, Blake Wacholz
Reviewer(s):	Bobby Toone (primary), Renee Benard, Elsie Andy
Disposition Date:	05/18/2021
Disposition Status:	Approved and Filed
Effective Date:	

**State:** Virginia  
**TOI/Sub-TOI:** LTC03I Individual Long Term Care/LTC03I.001 Qualified  
**Product Name:** Long-Term Care  
**Project Name/Number:** MassMutual LTC Rate Increase Filing/145MML01-10.02  
**Filing Company:** Massachusetts Mutual Life Insurance Company

## General Information

Project Name: MassMutual LTC Rate Increase Filing

Project Number: 145MML01-10.02

Requested Filing Mode: Review & Approval

Explanation for Combination/Other:

Submission Type: New Submission

Overall Rate Impact: 82%

Deemer Date: 05/27/2021

Submitted By: Shawn Stender

Status of Filing in Domicile: Pending

Date Approved in Domicile:

Domicile Status Comments: This filing has been submitted in Massachusetts on May 14, 2018.

Market Type: Individual

Individual Market Type:

Filing Status Changed: 05/18/2021

State Status Changed: 05/18/2021

Created By: Megan Anderson

Corresponding Filing Tracking Number:

State TOI: LTC03I Individual Long Term Care

### Filing Description:

On behalf of Massachusetts Mutual Life Insurance Company (MassMutual), we are submitting the referenced rate filing for your review. These are existing tax-qualified policy forms that provide long-term care coverage. These policy forms were written by MassMutual and issued in Virginia between July 19, 2000 and October 17, 2013. The forms are no longer being marketed in any jurisdiction.

The company is requesting a premium rate increase on these forms, including all associated riders. These forms are in need of a premium rate increase due to emerging and projected experience running more adverse than previously expected.

The company is requesting a premium rate increase to achieve a rate level consistent with that on its currently marketed 513 Series new business product. The resulting rate increase varies by rate series and all available options and riders. This rate increase is then capped on a seriatim basis such that no insured will receive a rate increase in excess of 100%. The table in the cover letter provides the distribution, range, and average requested rate increase in Virginia by rate series.

There have been no previous rate revisions on these forms. The company is seeking a rate increase at this time to help alleviate the adverse performance on this business.

The company will offer insureds affected by the premium increase the option of reducing their policy benefits to provide flexibility of choice for those insureds who wish to maintain a premium level reasonably similar to what they were paying prior to the rate increase. The company will offer a contingent benefit upon lapse to insureds that trigger a substantial rate increase. Additionally, the company will voluntarily offer a contingent benefit upon lapse to insureds affected by the rate increase, even if the increase is not considered substantial.

Enclosed with this submission is a policyowner notification letter, provided by the company, which is in compliance with 14VAC5-200-75. Enclosed with this submission are the appropriate statement of variability, certification of compliance, and readability certification for the form, as required.

## Company and Contact

### Filing Contact Information

Shawn Stender, Associate Actuary

shawn.stender@milliman.com

**State:** Virginia **Filing Company:** Massachusetts Mutual Life Insurance Company  
**TOI/Sub-TOI:** LTC03I Individual Long Term Care/LTC03I.001 Qualified  
**Product Name:** Long-Term Care  
**Project Name/Number:** MassMutual LTC Rate Increase Filing/145MML01-10.02

Milliman, Inc. 952-820-3104 [Phone]  
8500 Normandale Lake Blvd.  
Suite 1850  
Minneapolis, MN 55437

**Filing Company Information**

(This filing was made by a third party - millimaninc)

Massachusetts Mutual Life

CoCode: 65935

State of Domicile:

Insurance Company

Group Code: 435

Massachusetts

1295 State Street

Group Name:

Company Type:

Springfield, MA 01111

FEIN Number: 04-1590850

Life/Accident/Health

(413) 788-8411 ext. [Phone]

State ID Number:

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**State:** Virginia **Filing Company:** Massachusetts Mutual Life Insurance Company  
**TOI/Sub-TOI:** LTC03I Individual Long Term Care/LTC03I.001 Qualified  
**Product Name:** Long-Term Care  
**Project Name/Number:** MassMutual LTC Rate Increase Filing/145MML01-10.02

## Filing Fees

### State Fees

Fee Required? No

Retaliatory? No

Fee Explanation:



<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

## Correspondence Summary

### Dispositions

Status	Created By	Created On	Date Submitted
Approved and Filed	Bobby Toone	05/18/2021	05/18/2021

## Objection Letters and Response Letters

### Objection Letters

Status	Created By	Created On	Date Submitted
Info has been requested from company	Bobby Toone	04/20/2021	04/20/2021
Info has been requested from Actuary	Bobby Toone	04/07/2021	04/07/2021
Info has been requested from company	Bobby Toone	02/08/2021	02/08/2021
Info has been requested from company	Bobby Toone	01/27/2021	01/27/2021
Info has been requested from company	Bobby Toone	11/13/2020	11/13/2020
Info has been requested from company	Bobby Toone	11/06/2020	11/06/2020
Info has been requested from company	Bobby Toone	08/25/2020	08/25/2020
Info has been requested from company	Bobby Toone	07/31/2020	07/31/2020
Info has been requested from company	Bobby Toone	07/02/2020	07/02/2020
Info has been requested from company	Bobby Toone	07/02/2020	07/02/2020

### Response Letters

Responded By	Created On	Date Submitted
Blake Wacholz	04/26/2021	04/27/2021
Blake Wacholz	04/08/2021	04/08/2021
Rylee Sevigny	02/09/2021	02/18/2021
Rylee Sevigny	01/28/2021	02/01/2021
Blake Wacholz	12/01/2020	12/02/2020
Rylee Sevigny	11/06/2020	11/09/2020
Blake Wacholz	09/04/2020	09/23/2020
Blake Wacholz	08/03/2020	08/12/2020
Megan Anderson	07/06/2020	07/30/2020
Blake Wacholz	07/17/2020	08/13/2020

**State:** Virginia **Filing Company:** Massachusetts Mutual Life Insurance Company  
**TOI/Sub-TOI:** LTC03I Individual Long Term Care/LTC03I.001 Qualified  
**Product Name:** Long-Term Care  
**Project Name/Number:** MassMutual LTC Rate Increase Filing/145MML01-10.02

## Objection Letters and Response Letters

### Objection Letters

Status	Created By	Created On	Date Submitted
Info has been requested from company	Bobby Toone	04/27/2020	04/27/2020
Info has been requested from company	Bobby Toone	04/27/2020	04/27/2020
Info has been requested from company	Bobby Toone	02/28/2020	02/28/2020
Info has been requested from company	Bobby Toone	10/21/2019	10/21/2019
Info has been requested from company	Bobby Toone	04/10/2019	04/10/2019
Info has been requested from company	Bobby Toone	02/14/2019	02/14/2019
Info has been requested from company	Bobby Toone	10/01/2018	10/01/2018

### Response Letters

Responded By	Created On	Date Submitted
Rylee Sevigny	04/30/2020	04/30/2020
Rylee Sevigny	05/26/2020	05/27/2020
Shawn Stender	03/25/2020	03/27/2020
Megan Anderson	10/22/2019	11/04/2019
Rylee Sevigny	04/15/2019	04/29/2019
Peder Swenson	02/14/2019	02/14/2019
Rylee Sevigny	10/26/2018	11/01/2018

### Amendments

Schedule	Schedule Item Name	Created By	Created On	Date Submitted
Form	Notice of Premium Increase	Blake Wacholz	05/13/2021	05/14/2021
Supporting Document	Certification of Compliance	Blake Wacholz	05/13/2021	05/14/2021
Supporting Document	L&H Readability - Health	Blake Wacholz	05/13/2021	05/14/2021
Supporting Document	Statement of Variability	Blake Wacholz	05/13/2021	05/14/2021
Supporting Document	John Doe Sample Policyowner Notification Letter	Rylee Sevigny	12/10/2020	12/14/2020
Rate	Rate Tables	Blake Wacholz	07/27/2020	07/30/2020
Rate	Rate Tables	Blake Wacholz	07/27/2020	07/30/2020
Rate	Rate Tables	Blake Wacholz	07/27/2020	07/30/2020

SERFF Tracking #:

MILL-131569310

State Tracking #:

MILL-131569310

Company Tracking #:

MASSMUTUAL

State:

Virginia

Filing Company:

Massachusetts Mutual Life Insurance Company

TOI/Sub-TOI:

LTC03I Individual Long Term Care/LTC03I.001 Qualified

Product Name:

Long-Term Care

Project Name/Number:

MassMutual LTC Rate Increase Filing/145MML01-10.02

## Amendments

Schedule	Schedule Item Name	Created By	Created On	Date Submitted
Rate	Rate Tables	Blake Wacholz	07/27/2020	07/30/2020
Rate	Rate Tables	Blake Wacholz	07/27/2020	07/30/2020
Supporting Document	July 30, 2020 Amendment Letter	Blake Wacholz	07/27/2020	07/30/2020
Form	Notice of Premium Increase	Rylee Sevigny	06/16/2020	06/17/2020
Rate	Rate Tables	Rylee Sevigny	05/28/2020	06/17/2020
Rate	Rate Tables	Rylee Sevigny	05/28/2020	06/17/2020
Rate	Rate Tables	Rylee Sevigny	05/28/2020	06/17/2020
Rate	Rate Tables	Rylee Sevigny	05/28/2020	06/17/2020
Rate	Rate Tables	Rylee Sevigny	05/28/2020	06/17/2020
Supporting Document	Certification of Compliance	Rylee Sevigny	06/17/2020	06/17/2020
Supporting Document	L&H Readability - Health	Rylee Sevigny	06/17/2020	06/17/2020
Supporting Document	Statement of Variability	Rylee Sevigny	06/16/2020	06/17/2020
Supporting Document	June 16, 2020 Amendment Letter	Rylee Sevigny	06/16/2020	06/17/2020
Form	Notice of Premium Increase	Peder Swenson	09/04/2019	09/05/2019
Supporting Document	Certification of Compliance	Peder Swenson	09/04/2019	09/05/2019
Supporting Document	L&H Readability - Health	Peder Swenson	09/04/2019	09/05/2019
Supporting Document	Statement of Variability	Peder Swenson	09/04/2019	09/05/2019
Form	Notice of Premium Increase	Peder Swenson	11/02/2018	11/02/2018
Supporting Document	Certification of Compliance	Peder Swenson	11/02/2018	11/02/2018
Supporting Document	L&H Readability - Health	Peder Swenson	11/02/2018	11/02/2018
Supporting Document	Statement of Variability	Peder Swenson	11/02/2018	11/02/2018
Supporting Document	Supplement to the Actuarial Memorandum	Megan Anderson	09/04/2018	09/04/2018

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

## Filing Notes

Subject	Note Type	Created By	Created On	Date Submitted
Status Update	Note To Reviewer	Megan Anderson	01/14/2021	01/14/2021
Revised "John Doe" versions of forms	Note To Filer	Bobby Toone	12/02/2020	12/02/2020
Status Update	Note To Reviewer	Megan Anderson	10/23/2020	10/23/2020
Extension Request	Note To Filer	Bobby Toone	07/27/2020	07/27/2020
Extension Request	Note To Reviewer	Lauren Zenzen	07/27/2020	07/27/2020
Status Update	Note To Reviewer	Megan Anderson	04/16/2020	04/17/2020
Status Update	Note To Reviewer	Megan Anderson	02/21/2020	02/21/2020
Status Update	Note To Reviewer	Rylee Sevigny	10/18/2019	10/18/2019
Status Update	Note To Reviewer	Megan Anderson	07/01/2019	07/01/2019
Status Update	Note To Reviewer	Megan Anderson	12/13/2018	12/14/2018
Actuary Review and Final Report	Reviewer Note	Bobby Toone	02/14/2019	
RRS	Reviewer Note	Bobby Toone	10/15/2018	

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

## Disposition

Disposition Date: 05/18/2021

Effective Date:

Status: Approved and Filed

Comment: In approving this filing, the Company is reminded that pursuant to 14VAC5-200-153 D, it is required to provide updated experience reports for the next 3 years comparing the actual results to the results that the company projected in justifying the rate increase. We would expect the first of the three experience report filings to be made no later than 18-24 months after implementation, capturing a full 12 months of experience following the rate implementation, and including updated data through the most recent year end.

Company Name:	Overall % Indicated Change:	Overall % Rate Impact:	Written Premium Change for this Program:	Number of Policy Holders Affected for this Program:	Written Premium for this Program:	Maximum % Change (where req'd):	Minimum % Change (where req'd):
Massachusetts Mutual Life Insurance Company	82.000%	82.000%	\$8,683,031	4,736	\$10,560,999	100.000%	0.000%

Schedule	Schedule Item	Schedule Item Status	Public Access
Supporting Document (revised)	Certification of Compliance	Received & Acknowledged	Yes
Supporting Document	Certification of Compliance	Withdrawn	No
Supporting Document	Certification of Compliance	Withdrawn	No
Supporting Document	Certification of Compliance	Withdrawn	No
Supporting Document	Certification of Compliance	Withdrawn	No
Supporting Document	Certification of Compliance	Withdrawn	No
Supporting Document	Certification of Compliance	Withdrawn	No
Supporting Document	Certification of Compliance	Withdrawn	No
Supporting Document	Certification of Compliance	Withdrawn	No
Supporting Document	Certification of Compliance	Withdrawn	No
Supporting Document	Certification of Compliance	Withdrawn	No
Supporting Document	Certification of Compliance	Withdrawn	No
Supporting Document	Product Checklist	Received & Acknowledged	Yes
Supporting Document	L&H Actuarial Memorandum	Received & Acknowledged	Yes
Supporting Document	Long Term Care Insurance Rate Request Summary	Received & Acknowledged	Yes

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

Schedule	Schedule Item	Schedule Item Status	Public Access
Supporting Document (revised)	L&H Readability - Health	Received & Acknowledged	Yes
Supporting Document	L&H Readability - Health	Withdrawn	No
Supporting Document	L&H Readability - Health	Withdrawn	No
Supporting Document	L&H Readability - Health	Withdrawn	No
Supporting Document	L&H Readability - Health	Withdrawn	No
Supporting Document	L&H Readability - Health	Withdrawn	No
Supporting Document	L&H Readability - Health	Withdrawn	No
Supporting Document	L&H Readability - Health	Withdrawn	No
Supporting Document	L&H Readability - Health	Withdrawn	No
Supporting Document	L&H Readability - Health	Withdrawn	No
Supporting Document	L&H Readability - Health	Withdrawn	No
Supporting Document	L&H Readability - Health	Withdrawn	No
Supporting Document	L&H Readability - Health	Withdrawn	No
Supporting Document	L&H Readability - Health	Withdrawn	No
Supporting Document	Letter of Authorization	Received & Acknowledged	Yes
Supporting Document (revised)	Statement of Variability	Received & Acknowledged	Yes
Supporting Document	Statement of Variability	Withdrawn	No
Supporting Document	Statement of Variability	Withdrawn	No
Supporting Document	Statement of Variability	Withdrawn	No
Supporting Document	Statement of Variability	Withdrawn	No
Supporting Document	Statement of Variability	Withdrawn	No
Supporting Document	Statement of Variability	Withdrawn	No
Supporting Document	Statement of Variability	Withdrawn	No
Supporting Document	Statement of Variability	Withdrawn	No
Supporting Document	Statement of Variability	Withdrawn	No
Supporting Document	Statement of Variability	Withdrawn	No
Supporting Document	Statement of Variability	Withdrawn	No
Supporting Document	Statement of Variability	Withdrawn	No
Supporting Document	Statement of Variability	Withdrawn	No
Supporting Document	Statement of Variability	Withdrawn	No
Supporting Document	Cover Letter	Received & Acknowledged	Yes
Supporting Document (revised)	Supplement to the Actuarial Memorandum	Received & Acknowledged	Yes
Supporting Document	Supplement to the Actuarial Memorandum	Withdrawn	No

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

Schedule	Schedule Item	Schedule Item Status	Public Access
Supporting Document	Current Rate Tables	Received & Acknowledged	Yes
Supporting Document	Original Actuarial Memoranda	Received & Acknowledged	Yes
Supporting Document	Response to October 21, 2019 Request	Received & Acknowledged	Yes
Supporting Document	Response to April 27, 2020 Requests	Received & Acknowledged	Yes
Supporting Document	June 16, 2020 Amendment Letter	Received & Acknowledged	Yes
Supporting Document	July 30, 2020 Amendment Letter	Received & Acknowledged	Yes
Supporting Document (revised)	John Doe Sample Policyowner Notification Letter	Received & Acknowledged	Yes
Supporting Document	John Doe Sample Policyowner Notification Letter	Withdrawn	No
Supporting Document	Response to August 25, 2020 Requests	Received & Acknowledged	Yes
Form (revised)	Notice of Premium Increase	Filed	Yes
Form	Notice of Premium Increase	Withdrawn	No
Form	Notice of Premium Increase	Withdrawn	No
Form	Notice of Premium Increase	Withdrawn	No
Form	Notice of Premium Increase	Withdrawn	No
Form (revised)	Personalized Options Election Form	Filed	Yes
Form	Personalized Options Election Form	Withdrawn	No
Form	Notice of Premium Increase	Withdrawn	No
Form	Notice of Premium Increase	Withdrawn	No
Form	Notice of Premium Increase	Withdrawn	No
Form	Notice of Premium Increase	Withdrawn	No
Form	Notice of Premium Increase	Withdrawn	No
Form	Notice of Premium Increase	Withdrawn	No
Form	Notice of Premium Increase	Withdrawn	No
Form	Notice of Premium Increase	Withdrawn	No
Form	Notice of Premium Increase	Withdrawn	No
Form	Personalized Options Election Form	Withdrawn	No
Form	Personalized Options Election Form	Withdrawn	No
Rate (revised)	Rate Tables	Approved	Yes
Rate (revised)	Rate Tables	Approved	Yes
Rate (revised)	Rate Tables	Approved	Yes
Rate (revised)	Rate Tables	Approved	Yes

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

Schedule	Schedule Item	Schedule Item Status	Public Access
Rate (revised)	Rate Tables	Approved	Yes
Rate	Rate Tables	Withdrawn	No
Rate	Rate Tables	Withdrawn	No
Rate	Rate Tables	Withdrawn	No
Rate	Rate Tables	Withdrawn	No
Rate	Rate Tables	Withdrawn	No
Rate	Rate Tables	Withdrawn	No
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Rate	Rate Tables	Withdrawn	No
Rate	Rate Tables	Withdrawn	No



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<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
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## Objection Letter

Objection Letter Status	Info has been requested from company
Objection Letter Date	04/20/2021
Submitted Date	04/20/2021
Respond By Date	05/04/2021

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Dear Shawn Stender,

### **Introduction:**

*The Bureau has the following concerns and/or needs additional information to continue its review.*

*Please note, any revisions, modifications, or changes of any type to this filing must be clearly identified and explained in detail. For clarity, multiple changes should be summarized in a cover letter, etc.*

### **Objection 1**

*- Notice of Premium Increase, FR2251-VA-1 (0820) (Form)*

*Comments: The Bureau notes that the company logo is not bracketed, nor does it have to be. In the past we have had carriers consider their logo to be variable whether or not they bracket it. Please confirm that you don't consider your logo to be variable.*

*If the logo is considered variable, please put it in brackets and add an explanation to the SOV.*

### **Objection 2**

*- Notice of Premium Increase, FR2251-VA-1 (0820) (Form)*

*Comments: On page 4 of the letter, in the section under "Possible future changes", please clarify the second sentence by including something like "similar options will be offered".*

### **Conclusion:**

*We shall be glad to continue our review of this submission upon receipt of the requested information or resolution of the issues described above. Upon subsequent review, other concerns may require attention.*

*A response to this request for information is expected within 30 days. After 30 days, the filing will be DISAPPROVED and CLOSED unless an extension is requested. An initial extension of up to 30-days will be granted upon request made before the Respond By Date.*

*Once a submission has been closed, a new SERFF submission will be required. To expedite the review, the new submission should reference the SERFF tracking number of the prior submission and verify that all outstanding issues have been addressed. Should you wish to discuss any of the objections or provide additional information related to any of the objections, this should be done prior to making a new SERFF submission.*

*Please let me know if you need additional clarification.*

*Thank you for your courtesy and consideration in this matter.*

Sincerely,  
Bobby Toone

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<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
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<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

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## Objection Letter

Objection Letter Status	Info has been requested from Actuary
Objection Letter Date	04/07/2021
Submitted Date	04/07/2021
Respond By Date	05/07/2021

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Dear Shawn Stender,

**Introduction:**

The submission is *DISAPPROVED* and may not be used in the Commonwealth of Virginia.

One or more forms included within the submission were found to be in non-conformity with statutory, regulatory or administrative requirements as set forth below.

### Objection 1

Comments: The rate portion of this filing is complete, however, the filing cannot be approved until the forms review is complete. No response to this objection is required.

**Conclusion:**

We shall be glad to reconsider this submission upon receipt of the revised forms to address the objections noted above. Should you need clarification of any of the information contained in this letter, please contact the undersigned.

A response to this objection (or request for information if more applicable) is expected within 30 days. After 30 days, the filing will be *DISAPPROVED* unless a 30-day extension is requested.

Once a submission has been closed, a new SERFF submission will be required. To expedite the review, the new submission should reference the SERFF tracking number of the prior submission and verify that all outstanding issues have been addressed.

Should you wish to discuss any of the objections or provide additional information related to any of the objections, this should be done prior to making a new SERFF submission.

Thank you for your courtesy and consideration in this matter.

Sincerely,  
Bobby Toone

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<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

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## Objection Letter

Objection Letter Status	Info has been requested from company
Objection Letter Date	02/08/2021
Submitted Date	02/08/2021
Respond By Date	03/10/2021

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Dear Shawn Stender,

### Introduction:

The Bureau has the following concerns and/or needs additional information to continue its review.

Please note, any revisions, modifications, or changes of any type to this filing not specifically requested by us must be brought to our attention upon resubmission and explained in detail.

### Objection 1

- Notice of Premium Increase, FR2251-VA-1 (0820) (Form)

Comments: The first time the company is named in the body of the letter, it should be the company's full legal name with MassMutual in parentheses. Please correct.

### Objection 2

- Notice of Premium Increase, FR2251-VA-1 (0820) (Form)

Comments: The third paragraph on page 1 is unclear as to the specific reasons for the rate increase. Please provide more specific reasons for the requested increase. These reasons may be that people are staying on claim longer, resulting in higher claim costs; fewer people are dropping their policies, which results in more people filing claims. Please make the necessary revisions to clarify this paragraph.

### Objection 3

- Notice of Premium Increase, FR2251-VA-1 (0820) (Form)

Comments: It appears to, the Bureau, that the third paragraph on page 2 is out of place and would fit better in the section on page 2 beginning with "Understanding your options".

### Objection 4

- Notice of Premium Increase, FR2251-VA-1 (0820) (Form)

Comments: The second paragraph on page 3 that begins with, "You always have the option..." seems to be a good place to refer policyholders to the Personalized Options election Form.

### Conclusion:

We will be glad to continue our review of this submission upon receipt of the requested information or resolution of the issues described above. Upon subsequent review, other concerns may require attention.

A response to this request for information is expected within 30 days. After 30 days, the filing will be DISAPPROVED and CLOSED unless an extension is requested. An initial extension of up to 30-days will be granted upon request before the Respond By Date.

Once a submission has been closed, a new SERFF submission will be required. To expedite the review, the new submission should reference the SERFF tracking number of the prior submission and verify that all outstanding issues have been addressed. Should you wish to discuss any of the objections or provide additional information related to any of the objections, this should be done prior to making a new SERFF submission.

Should you need clarification, please contact me

**State:** Virginia **Filing Company:** Massachusetts Mutual Life Insurance Company  
**TOI/Sub-TOI:** LTC03I Individual Long Term Care/LTC03I.001 Qualified  
**Product Name:** Long-Term Care  
**Project Name/Number:** MassMutual LTC Rate Increase Filing/145MML01-10.02

*Thank you for your courtesy and consideration in this matter.*

*Sincerely,  
Bobby Toone*

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<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

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## Objection Letter

Objection Letter Status	Info has been requested from company
Objection Letter Date	01/27/2021
Submitted Date	01/27/2021
Respond By Date	02/10/2021

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Dear Shawn Stender,

### **Introduction:**

*The Bureau has the following concerns and/or needs additional information to continue its review.*

*Please note, any revisions, modifications, or changes of any type to this filing not specifically requested by us must be brought to our attention upon resubmission and explained in detail.*

### **Objection 1**

*- Notice of Premium Increase, FR2251-VA-1 (0820) (Form)*

*Comments: We have a concern with the first sentence in the last paragraph on page 3 that seems to imply the State Department/Bureau of Insurance provides "counseling to help determine how to proceed." It appears to give a policyholder the impression that the BOI can assist the policyholder with choosing an option.*

*Please revise this sentence or remove it. Should the company wish to keep it, an example of revised language could be something similar to, "You may also contact your State Department/Bureau of Insurance for help in understanding your long-term care policy."*

### **Conclusion:**

*We will be glad to continue our review of this submission upon receipt of the requested information or resolution of the issues described above. Upon subsequent review, other concerns may require attention.*

*A response to this request for information is expected within 30 days. After 30 days, the filing will be DISAPPROVED and CLOSED unless an extension is requested. An initial extension of up to 30-days will be granted upon request before the Respond By Date.*

*Once a submission has been closed, a new SERFF submission will be required. To expedite the review, the new submission should reference the SERFF tracking number of the prior submission and verify that all outstanding issues have been addressed. Should you wish to discuss any of the objections or provide additional information related to any of the objections, this should be done prior to making a new SERFF submission.*

*Should you need clarification, please contact me*

*Thank you for your courtesy and consideration in this matter.*

*Sincerely,  
Bobby Toone*

**State:** Virginia **Filing Company:** Massachusetts Mutual Life Insurance Company  
**TOI/Sub-TOI:** LTC03I Individual Long Term Care/LTC03I.001 Qualified  
**Product Name:** Long-Term Care  
**Project Name/Number:** MassMutual LTC Rate Increase Filing/145MML01-10.02

## Objection Letter

Objection Letter Status	Info has been requested from company
Objection Letter Date	11/13/2020
Submitted Date	11/13/2020
Respond By Date	12/04/2020

Dear Shawn Stender,

### Introduction:

The Bureau has the following concerns and/or needs additional information to continue its review.

Please note, any revisions, modifications, or changes of any type to this filing not specifically requested by us must be brought to our attention upon resubmission and explained in detail.

### Objection 1

- Notice of Premium Increase, FR2251-VA-1 (0820) (Form)

Comments: In the section about waiver of premium, please provide a statement explaining when a person on premium waiver will be expected to make any decisions about changes to their coverage. For example; will they be required to decide on these options while on waiver and may be experiencing reduced mental or physical capacity; or will they be given a period of time after they come off waiver to make these decisions?

### Objection 2

- Notice of Premium Increase, FR2251-VA-1 (0820) (Form)

Comments: In compliance with 14VAC5-200-75 A 4(b), stating that the policyholder has the right to a revised premium rate or rate schedule in the event of future rate increases.

### Objection 3

- Notice of Premium Increase, FR2251-VA-1 (0820) (Form)

Comments: In option 3 of "What you need to do", provide a description of the Contingent Benefit Upon Lapse Option or the Nonforfeiture option as described in either 14VAC5-200-185 E 3 or 14VAC5-200-185 D 6(b). This can be shown as variable and described in the Statement of Variability.

### Objection 4

- Statement of Variability (Supporting Document)

- Notice of Premium Increase, FR2251-VA-1 (0820) (Form)

Comments: Please revise the description of [Date] in the Statement of Variability to reflect that the policyholder will have at least a 90-day notification period prior to the premium increase effective date, as is stated in the Actuarial Memorandum.

### Objection 5

- Notice of Premium Increase, FR2251-VA-1 (0820) (Form)

Comments: For consistency, please revise the statement at the top of page 2 to more closely match the language in 14VAC5-200-75 D 4:

"The rate increase request was reviewed by the commission and was found to be compliant with applicable Virginia laws and regulations addressing long-term care insurance. All premium rate filings are available for public inspection and may be accessed online through the Virginia Bureau of Insurance's webpage at <https://scc.virginia.gov/boi/SERFFInquiry/LtcFilings.aspx>."

### Objection 6

- Notice of Premium Increase, FR2251-VA-1 (0820) (Form)

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<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

*Comments: On page 5, where the "cc" is; please clarify why a copy of the letter would be sent to the insured, when the policyowner will already be receiving a copy. If the policyowner and insured are the same, this would indicate that they would be mailed 2 copies of the letter. If the policyowner and insured are different, then the insured would have no authority to act on the letter.*

**Conclusion:**

*We will be glad to continue our review of this submission upon receipt of the requested information or resolution of the issues described above. Upon subsequent review, other concerns may require attention.*

*A response to this objection (or request for information if more applicable) is expected within 30 days. After 30 days, the filing will be DISAPPROVED unless a 30-day extension is requested.*

*Once a submission has been closed, a new SERFF submission will be required. To expedite the review, the new submission should reference the SERFF tracking number of the prior submission and verify that all outstanding issues have been addressed.*

*Should you wish to discuss any of the objections or provide additional information related to any of the objections, this should be done prior to making a new SERFF submission.*

*Thank you for your courtesy and consideration in this matter.*

*Sincerely,  
Bobby Toone*

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**State:** Virginia **Filing Company:** Massachusetts Mutual Life Insurance Company  
**TOI/Sub-TOI:** LTC03I Individual Long Term Care/LTC03I.001 Qualified  
**Product Name:** Long-Term Care  
**Project Name/Number:** MassMutual LTC Rate Increase Filing/145MML01-10.02

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## Objection Letter

Objection Letter Status	Info has been requested from company
Objection Letter Date	11/06/2020
Submitted Date	11/06/2020
Respond By Date	11/20/2020

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Dear Shawn Stender,

### **Introduction:**

*The Bureau has the following concerns and/or needs additional information to continue its review.*

*Please note, any revisions, modifications, or changes of any type to this filing not specifically requested by us must be brought to our attention upon resubmission and explained in detail.*

### **Objection 1**

*- Notice of Premium Increase, FR2251-VA-1 (0820) (Form)*

*Comments: Please explain the closed bracket( ] ) on the line beneath the "Rider Name 3" bullet on page 3 of the letter.*

### **Objection 2**

*- Notice of Premium Increase, FR2251-VA-1 (0820) (Form)*

*Comments: There is still an issue of the prominence of the company name on page one, mainly because the bolded statement that begins with "RE:..." appears to be the same font size as the company name. If the company name were in a larger font, that would satisfy the regulation.*

### **Objection 3**

*- Notice of Premium Increase, FR2251-VA-1 (0820) (Form)*

*Comments: For consistency, please revise the first sentence of the first paragraph on page 2 to read, "....the rate increase request was reviewed by the Virginia Bureau of Insurance..."*

### **Conclusion:**

*We will be glad to continue our review of this submission upon receipt of the requested information or resolution of the issues described above. Upon subsequent review, other concerns may require attention.*

*A response to this objection (or request for information if more applicable) is expected within 30 days. After 30 days, the filing will be DISAPPROVED unless a 30-day extension is requested.*

*Once a submission has been closed, a new SERFF submission will be required. To expedite the review, the new submission should reference the SERFF tracking number of the prior submission and verify that all outstanding issues have been addressed.*

*Should you wish to discuss any of the objections or provide additional information related to any of the objections, this should be done prior to making a new SERFF submission.*

*Thank you for your courtesy and consideration in this matter.*

*Sincerely,  
Bobby Toone*



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<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

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## Objection Letter

Objection Letter Status	Info has been requested from company
Objection Letter Date	08/25/2020
Submitted Date	08/25/2020
Respond By Date	09/24/2020

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Dear Shawn Stender,

### **Introduction:**

*The Bureau has the following concerns and/or needs additional information to continue its review.*

*Please note, any revisions, modifications, or changes of any type to this filing not specifically requested by us must be brought to our attention upon resubmission and explained in detail.*

### **Objection 1**

*- Response to October 21, 2019 Request (Supporting Document)*

*Comments: 1. As the minimum projected premium in this spreadsheet, is \$131 correct as an annual premium? Without providing any personal policyholder information, please provide the level of benefits that would be included in that premium level, including daily benefits, lifetime benefits, etc.*

*2. As the maximum projected premium listed, please show how an annual premium of \$46,859 is reasonable in relation to the benefits received. This would also include the types of benefits listed in the previous question.*

*3. Provide the same information requested above for projected annual premiums of \$3,374 (VA Policyholder count no. 4125) and \$12,137 (VA Policyholder count no. 2969).*

*4. Please provide actuarial justification for this range of increases in addition to bringing premiums in line with the 513 series of policies.*

*5. Provide an exhibit demonstrating how a premium is developed from the proposed rate sheets provided, including examples from the highest premium level, the lowest level, and some from the middle range.*

### **Conclusion:**

*We will be glad to continue our review of this submission upon receipt of the requested information or resolution of the issues described above. Upon subsequent review, other concerns may require attention.*

*A response to this objection (or request for information if more applicable) is expected within 30 days. After 30 days, the filing will be DISAPPROVED unless a 30-day extension is requested.*

*Once a submission has been closed, a new SERFF submission will be required. To expedite the review, the new submission should reference the SERFF tracking number of the prior submission and verify that all outstanding issues have been addressed.*

*Should you wish to discuss any of the objections or provide additional information related to any of the objections, this should be done prior to making a new SERFF submission.*

*Thank you for your courtesy and consideration in this matter.*

*Sincerely,*

**State:** Virginia **Filing Company:** Massachusetts Mutual Life Insurance Company  
**TOI/Sub-TOI:** LTC03I Individual Long Term Care/LTC03I.001 Qualified  
**Product Name:** Long-Term Care  
**Project Name/Number:** MassMutual LTC Rate Increase Filing/145MML01-10.02

Bobby Toone

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<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

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## Objection Letter

Objection Letter Status	Info has been requested from company
Objection Letter Date	07/31/2020
Submitted Date	07/31/2020
Respond By Date	08/15/2020

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Dear Shawn Stender,

### **Introduction:**

*The Bureau has the following concerns and/or needs additional information to continue its review.*

*Please note, any revisions, modifications, or changes of any type to this filing not specifically requested by us must be brought to our attention upon resubmission and explained in detail.*

### **Objection 1**

*- Response to October 21, 2019 Request (Supporting Document)*

*Comments: Thank you for sending the breakdown of pending increases. Please provide some clarification on how the increases were determined. We understand that every policyholder with a series 300 policy with Lifetime benefits and 5% compound inflation protection will get a 100% increase, but please explain why there is such a variety of increases.*

### **Conclusion:**

*We will be glad to continue our review of this submission upon receipt of the requested information or resolution of the issues described above. Upon subsequent review, other concerns may require attention.*

*A response to this objection (or request for information if more applicable) is expected within 30 days. After 30 days, the filing will be DISAPPROVED unless a 30-day extension is requested.*

*Once a submission has been closed, a new SERFF submission will be required. To expedite the review, the new submission should reference the SERFF tracking number of the prior submission and verify that all outstanding issues have been addressed.*

*Should you wish to discuss any of the objections or provide additional information related to any of the objections, this should be done prior to making a new SERFF submission.*

*Thank you for your courtesy and consideration in this matter.*

Sincerely,  
Bobby Toone

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<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

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## Objection Letter

Objection Letter Status	Info has been requested from company
Objection Letter Date	07/02/2020
Submitted Date	07/02/2020
Respond By Date	08/01/2020

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Dear Shawn Stender,

### **Introduction:**

*The Bureau has the following concerns and/or needs additional information to continue its review.*

*Please note, any revisions, modifications, or changes of any type to this filing not specifically requested by us must be brought to our attention upon resubmission and explained in detail.*

### **Objection 1**

- L&H Actuarial Memorandum (Supporting Document)
- Supplement to the Actuarial Memorandum (Supporting Document)

*Comments: Please provide a specific breakdown of how policyholders will be affected by this rate increase based on age, benefit levels, etc. In other words, if a policyholder is 65 years old with a 300 Series policy, that has a lifetime benefit period, with 5% compound inflation protection, how much would his rate increase be?*

### **Conclusion:**

*We will be glad to continue our review of this submission upon receipt of the requested information or resolution of the issues described above. Upon subsequent review, other concerns may require attention.*

*A response to this objection (or request for information if more applicable) is expected within 30 days. After 30 days, the filing will be DISAPPROVED unless a 30-day extension is requested.*

*Once a submission has been closed, a new SERFF submission will be required. To expedite the review, the new submission should reference the SERFF tracking number of the prior submission and verify that all outstanding issues have been addressed.*

*Should you wish to discuss any of the objections or provide additional information related to any of the objections, this should be done prior to making a new SERFF submission.*

*Thank you for your courtesy and consideration in this matter.*

Sincerely,  
Bobby Toone

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<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

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## Objection Letter

Objection Letter Status	Info has been requested from company
Objection Letter Date	07/02/2020
Submitted Date	07/02/2020
Respond By Date	08/01/2020

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Dear Shawn Stender,

### **Introduction:**

*The Bureau has the following concerns and/or needs additional information to continue its review.*

*Please note, any revisions, modifications, or changes of any type to this filing not specifically requested by us must be brought to our attention upon resubmission and explained in detail.*

### **Objection 1**

*- Notice of Premium Increase, FR2251-VA-1 (0420) (Form)*

*Comments: In compliance with 14VAC5-200-75 A 4(b), provide an statement that a policyholder has the right to a revised premium rate or rate schedule if the premium rate or rate schedule is changed.*

### **Objection 2**

*- Notice of Premium Increase, FR2251-VA-1 (0420) (Form)*

*Comments: 14VAC-200-75 D 2(b) requires that a disclosure that all options available to the policyholder may not be of equal value. This disclosure needs to be included in a section of the letter that is NOT variable and should be emphasized by either bolding, highlighting, etc.*

### **Objection 3**

*- Notice of Premium Increase, FR2251-VA-1 (0420) (Form)*

*Comments: On page 3 of the letter, the section referring to partnership policies is considered a disclosure, and as such, should be emphasized by either bold print, highlighting, etc.*

### **Objection 4**

*- Notice of Premium Increase, FR2251-VA-1 (0420) (Form)*

*Comments: On page 6, the company may consider adding brackets to the company's address and phone number in case a change is needed.*

### **Objection 5**

*- Notice of Premium Increase, FR2251-VA-1 (0420) (Form)*

*Comments: The web address for the Virginia Bureau of Insurance has changed. The revised address is <https://scc.virginia.gov/boi/SERFFInquiry/LtcFilings.aspx>.*

### **Objection 6**

*- Notice of Premium Increase, FR2251-VA-1 (0420) (Form)*

*Comments: 14VAC5-200-75 requires that an insurer provides notice of an upcoming premium rate schedule increase to all policyholders at least 75 days prior to the implementation of the premium rate schedule increase. Please confirm that the company will comply with this requirement so that the policyholders will have a minimum of 75 days to make any decisions once they receive the letter.*

### **Objection 7**

*- Notice of Premium Increase, FR2251-VA-1 (0420) (Form)*

**State:** Virginia **Filing Company:** Massachusetts Mutual Life Insurance Company  
**TOI/Sub-TOI:** LTC03I Individual Long Term Care/LTC03I.001 Qualified  
**Product Name:** Long-Term Care  
**Project Name/Number:** MassMutual LTC Rate Increase Filing/145MML01-10.02

Comments: Virginia Regulation 14VAC5-101-60-2 requires that the full licensed name of the company, including the address, appear prominently at the top of any form. Examples of prominent print include all capital letters, bold print, enlarged font, or otherwise differentiated from the other print in the form.

#### Objection 8

- Notice of Premium Increase, FR2251-VA-1 (0420) (Form)

Comments: In compliance with 14VAC5-101-60 5, please submit a copy of each form in the final form in which it is to be marketed or issued, completed in a "John Doe" fashion to indicate how it is intended to be used.

#### Objection 9

- Notice of Premium Increase, FR2251-VA-1 (0420) (Form)

Comments: We have some concerns about the section of the letter on page 4, that starts with "IMPORTANT NOTE ABOUT BILLING". If the company is requesting that a policyholder respond 50 days prior to the Policy Anniversary Date, we feel that will be out of compliance with 14VAC5-200-75 which requires that an insurer give their policyholders at least 75 days notice of an impending premium increase.

#### Objection 10

- Notice of Premium Increase, FR2251-VA-1 (0420) (Form)

Comments: The company may consider using this letter as a template for future letters, to simplify the review process in case of future rate increases. If so, we would recommend putting brackets around the reasons for the increase on page 1 of the letter.

The SOV would need to be revised to show the variability, using language similar to this:

"[After a careful and thorough assessment,t] This section is bracketed to allow for different reasons to be used for future rate increases. The company will revise and resubmit the SOV should different language be required."

#### Objection 11

- Personalized Options Election Form, FR2251EF-VA (0420) (Form)

Comments: Virginia Regulation 14VAC5-101-60-2 requires that the full licensed name of the company, including the address, appear prominently at the top of any form. Examples of prominent print include all capital letters, bold print, enlarged font, or otherwise differentiated from the other print in the form.

#### Objection 12

- Personalized Options Election Form, FR2251EF-VA (0420) (Form)

Comments: 14VAC5-200-75 requires that an insurer provides notice of an upcoming premium rate schedule increase to all policyholders at least 75 days prior to the implementation of the premium rate schedule increase. Please confirm that the company will comply with this requirement so that the policyholders will have a minimum of 75 days to make any decisions once they receive the letter.

#### Objection 13

- Personalized Options Election Form, FR2251EF-VA (0420) (Form)

Comments: The section of the Option Selection Form referring to the Non-Forfeiture rider and the CBUL option refers to an option 1 and option 2. 14VAC5-200-185 E 3 state that the standard CBUL option is 100% of the sum of all premiums paid, including the premiums paid prior to any changes in benefits but not less than 30 times the daily nursing home benefit at the time of lapse. Please provide a description of both options.

#### Objection 14

- Notice of Premium Increase, FR2251-VA-1 (0420) (Form)

Comments: In the section of the letter titled "Understanding Your Options", please include the option of triggering the Contingent Benefit Upon Lapse (CBUL) or the Non-Forfeiture Option, and provide a description of those options.

**State:** Virginia **Filing Company:** Massachusetts Mutual Life Insurance Company  
**TOI/Sub-TOI:** LTC03I Individual Long Term Care/LTC03I.001 Qualified  
**Product Name:** Long-Term Care  
**Project Name/Number:** MassMutual LTC Rate Increase Filing/145MML01-10.02

**Objection 15**

- Notice of Premium Increase, FR2251-VA-1 (0420) (Form)

Comments: In the section of the letter explaining Waiver of Premium, when is a policyholder on waiver of premium required to make any decisions about changing his benefits in the event of a rate increase?

**Objection 16**

- Statement of Variability (Supporting Document)

Comments: On page 1 of the SOV for the Policyowner Letter, please explain the note under Joint Policyowner Name that states: "On page 8, the joint policyowner name..." Please explain that note as we could not find a page 8.

**Objection 17**

- Statement of Variability (Supporting Document)

- Notice of Premium Increase, FR2251-VA-1 (0420) (Form)

Comments: On page 3 of the policyowner letter, the section describing benefits has the potential to be misleading. It seems if each of the benefits were made variable, then each letter would contain descriptions of only those options available to each policyowner.

This also applies to the section labeled "Remove or reduce optional riders". If that section were made variable, a policyowner who has no optional riders would not have that section in his/her letter.

Please revise the SOV to show these changes in variability.

**Objection 18**

- Notice of Premium Increase, FR2251-VA-1 (0420) (Form)

Comments: On page 2, paragraph 2; for clarity, this required statement should be included within the paragraph notifying the insured of the premium increase.

**Objection 19**

- Statement of Variability (Supporting Document)

- Notice of Premium Increase, FR2251-VA-1 (0420) (Form)

Comments: Please specify if the date of the letter, shown on page 1, is the print date or the mail date. Verify that the 75 days notice required in 14VAC5-200-75 D is not included in this date.

**Objection 20**

- Statement of Variability (Supporting Document)

- Notice of Premium Increase, FR2251-VA-1 (0420) (Form)

Comments: The policyholder letter SOV states that The Policy Anniversary Date is bracketed on page 3. We could not find that on page 3. Please correct the SOV.

**Objection 21**

- Notice of Premium Increase, FR2251-VA-1 (0420) (Form)

Comments: Please explain how you administer the offering of reduced policy benefit options to an insured who is on waiver of premium. Are insureds on waiver required to make decisions about their policy options while in a period of reduced capacity?

**Objection 22**

- Notice of Premium Increase, FR2251-VA-1 (0420) (Form)

Comments: Please clarify the sentence on page 3 referring to covered partner benefits.

**Objection 23**

- Notice of Premium Increase, FR2251-VA-1 (0420) (Form)

**State:** Virginia **Filing Company:** Massachusetts Mutual Life Insurance Company  
**TOI/Sub-TOI:** LTC03I Individual Long Term Care/LTC03I.001 Qualified  
**Product Name:** Long-Term Care  
**Project Name/Number:** MassMutual LTC Rate Increase Filing/145MML01-10.02

*Comments: The 5th paragraph on page 3, that starts with A Personalized Options Selection Form seems out of place in its present location. We feel it may be better suited closer to the description of the options available.*

**Objection 24**

- Notice of Premium Increase, FR2251-VA-1 (0420) (Form)

*Comments: On page 4, the second Note at the end of the section called What you need to do could be misleading. According to the Actuarial Memorandum, the CBUL will be offered to all insureds affected by this increase. The section that states your policy will lapse due to non-payment of premium implies that an insured will lose their policy, when it will actually become paid-up under the CBUL. Please revise the paragraph to remove that section.*

**Objection 25**

- Notice of Premium Increase, FR2251-VA-1 (0420) (Form)

*Comments: In the section titled Important Note About Billing, if the company expects to hear from the insured at least 50 days prior to the policy anniversary date, how can the insured be given a minimum of 75 days notice in which to make any decisions as required in 14VAC5-200-75 D.*

**Objection 26**

- Notice of Premium Increase, FR2251-VA-1 (0420) (Form)

*Comments: Please explain why, if an insured sends their request to change coverage by the anniversary date, the company would draft the increased premium, and then have to refund any overpayment.*

**Objection 27**

- Notice of Premium Increase, FR2251-VA-1 (0420) (Form)

*Comments: The section of the letter titled "Important Information about the Contingent Benefit Upon Lapse Option" states "Your policy must be paid to the Policy Anniversary Date in order for this benefit to be available."*

*Virginia Regulation 14VAC5-200-185 D 3, has no stipulation that a policy must be paid to the anniversary date to qualify for the CBUL. Please remove that sentence.*

**Conclusion:**

*We will be glad to continue our review of this submission upon receipt of the requested information or resolution of the issues described above. Upon subsequent review, other concerns may require attention.*

*A response to this objection (or request for information if more applicable) is expected within 30 days. After 30 days, the filing will be DISAPPROVED unless a 30-day extension is requested.*

*Once a submission has been closed, a new SERFF submission will be required. To expedite the review, the new submission should reference the SERFF tracking number of the prior submission and verify that all outstanding issues have been addressed.*

*Should you wish to discuss any of the objections or provide additional information related to any of the objections, this should be done prior to making a new SERFF submission.*

*Thank you for your courtesy and consideration in this matter.*

Sincerely,  
Bobby Toone



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<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

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## Objection Letter

Objection Letter Status	Info has been requested from company
Objection Letter Date	04/27/2020
Submitted Date	04/27/2020
Respond By Date	05/27/2020

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Dear Shawn Stender,

**Introduction:**

The Bureau has the following concerns and/or needs additional information to continue its review.

Please note, any revisions, modifications, or changes of any type to this filing not specifically requested by us must be brought to our attention upon resubmission and explained in detail.

### Objection 1

- Notice of Premium Increase, FR2251-VA-1 (0320) (Form)
- Personalized Options Election Form, FR2251EF-VA (0320) (Form)

Comments: Per our phone conversation on 05/27/2020, please increase to font size 10 the corporate address and phone numbers at the bottom of page 1 in each of the above mentioned forms.

### Conclusion:

We will be glad to continue our review of this submission upon receipt of the requested information or resolution of the issues described above. Upon subsequent review, other concerns may require attention.

A response to this objection (or request for information if more applicable) is expected within 30 days. After 30 days, the filing will be DISAPPROVED unless a 30-day extension is requested.

Once a submission has been closed, a new SERFF submission will be required. To expedite the review, the new submission should reference the SERFF tracking number of the prior submission and verify that all outstanding issues have been addressed.

Should you wish to discuss any of the objections or provide additional information related to any of the objections, this should be done prior to making a new SERFF submission.

Thank you for your courtesy and consideration in this matter.

Sincerely,  
Bobby Toone

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**State:** Virginia **Filing Company:** Massachusetts Mutual Life Insurance Company  
**TOI/Sub-TOI:** LTC03I Individual Long Term Care/LTC03I.001 Qualified  
**Product Name:** Long-Term Care  
**Project Name/Number:** MassMutual LTC Rate Increase Filing/145MML01-10.02

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## Objection Letter

Objection Letter Status	Info has been requested from company
Objection Letter Date	04/27/2020
Submitted Date	04/27/2020
Respond By Date	05/27/2020

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Dear Shawn Stender,

### **Introduction:**

*The Bureau has the following concerns and/or needs additional information to continue its review.*

*Please note, any revisions, modifications, or changes of any type to this filing not specifically requested by us must be brought to our attention upon resubmission and explained in detail.*

### **Objection 1**

*- L&H Actuarial Memorandum (Supporting Document)*

*Comments: Please provide all projections necessary to evaluate the requests based on both the Prospective Present Value Approach (or Texas Method) and the "If-Knew/Makeup Blend" approach (or Minnesota Method).*

### **Objection 2**

*- L&H Actuarial Memorandum (Supporting Document)*

*Comments: Please explain why, with all the concerns and press about Long-Term Care insurance rates, the company has filed any previous rate increase requests.*

### **Conclusion:**

*We will be glad to continue our review of this submission upon receipt of the requested information or resolution of the issues described above. Upon subsequent review, other concerns may require attention.*

*A response to this objection (or request for information if more applicable) is expected within 30 days. After 30 days, the filing will be DISAPPROVED unless a 30-day extension is requested.*

*Once a submission has been closed, a new SERFF submission will be required. To expedite the review, the new submission should reference the SERFF tracking number of the prior submission and verify that all outstanding issues have been addressed.*

*Should you wish to discuss any of the objections or provide additional information related to any of the objections, this should be done prior to making a new SERFF submission.*

*Thank you for your courtesy and consideration in this matter.*

Sincerely,  
Bobby Toone

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**State:** Virginia **Filing Company:** Massachusetts Mutual Life Insurance Company  
**TOI/Sub-TOI:** LTC03I Individual Long Term Care/LTC03I.001 Qualified  
**Product Name:** Long-Term Care  
**Project Name/Number:** MassMutual LTC Rate Increase Filing/145MML01-10.02

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## Objection Letter

Objection Letter Status	Info has been requested from company
Objection Letter Date	02/28/2020
Submitted Date	02/28/2020
Respond By Date	03/29/2020

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Dear Shawn Stender,

### **Introduction:**

The Bureau has the following concerns and/or needs additional information to continue its review.

Please note, any revisions, modifications, or changes of any type to this filing not specifically requested by us must be brought to our attention upon resubmission and explained in detail.

### **Objection 1**

- Notice of Premium Increase, FR2251-VA-1 (0819) (Form)

Comments: So that we may continue our review of the Policyholder Letter, please unlock the document.

### **Objection 2**

- Notice of Premium Increase, FR2251-VA-1 (0819) (Form)

Comments: 14VAC5-101-60 1 requires that each form used by a company have it's own distinctive form number. As the Personalized Options Election Form seems to be designed to be separated from the Policyholder Letter and returned to the company, please assign it a new form number and include it on a separate line on the Forms Schedule.

### **Objection 3**

- Notice of Premium Increase, FR2251-VA-1 (0819) (Form)

Comments: Please verify that the font size of all forms, including street addresses and phone numbers are all a minimum of font size 10, pursuant to 14VAC5-101-70 E.

### **Conclusion:**

We will be glad to continue our review of this submission upon receipt of the requested information or resolution of the issues described above. Upon subsequent review, other concerns may require attention.

A response to this objection (or request for information if more applicable) is expected within 30 days. After 30 days, the filing will be DISAPPROVED unless a 30-day extension is requested.

Once a submission has been closed, a new SERFF submission will be required. To expedite the review, the new submission should reference the SERFF tracking number of the prior submission and verify that all outstanding issues have been addressed.

Should you wish to discuss any of the objections or provide additional information related to any of the objections, this should be done prior to making a new SERFF submission.

Thank you for your courtesy and consideration in this matter.

Sincerely,  
Bobby Toone

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<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

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## Objection Letter

Objection Letter Status	Info has been requested from company
Objection Letter Date	10/21/2019
Submitted Date	10/21/2019
Respond By Date	11/20/2019

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Dear Shawn Stender,

### **Introduction:**

*The Bureau has the following concerns and/or needs additional information to continue its review.*

*Please note, any revisions, modifications, or changes of any type to this filing not specifically requested by us must be brought to our attention upon resubmission and explained in detail.*

### **Objection 1**

*- L&H Actuarial Memorandum (Supporting Document)*

*Comments: In section 2 of the Actuarial Memorandum, please provide a more detailed breakdown of the requested rate increases by providing the actual increase requested, as opposed to a range.*

### **Conclusion:**

*We will be glad to continue our review of this submission upon receipt of the requested information or resolution of the issues described above. Upon subsequent review, other concerns may require attention.*

*A response to this objection (or request for information if more applicable) is expected within 30 days. After 30 days, the filing will be DISAPPROVED unless a 30-day extension is requested.*

*Once a submission has been closed, a new SERFF submission will be required. To expedite the review, the new submission should reference the SERFF tracking number of the prior submission and verify that all outstanding issues have been addressed.*

*Should you wish to discuss any of the objections or provide additional information related to any of the objections, this should be done prior to making a new SERFF submission.*

*Thank you for your courtesy and consideration in this matter.*

Sincerely,  
Bobby Toone

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**State:** Virginia **Filing Company:** Massachusetts Mutual Life Insurance Company  
**TOI/Sub-TOI:** LTC03I Individual Long Term Care/LTC03I.001 Qualified  
**Product Name:** Long-Term Care  
**Project Name/Number:** MassMutual LTC Rate Increase Filing/145MML01-10.02

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## Objection Letter

Objection Letter Status	Info has been requested from company
Objection Letter Date	04/10/2019
Submitted Date	04/10/2019
Respond By Date	05/10/2019

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Dear Shawn Stender,

### **Introduction:**

Thank you for your previous response, however, one or more items included within the submission were found to be in non-conformity with statutory, regulatory or administrative requirements as set forth below.

### **Objection 1**

- L&H Actuarial Memorandum (Supporting Document)

Comments: Section 19 of the Actuarial Memorandum says there are 4,736 policyholders in Virginia, while the Company Rate Information section of the Rate/Rule Schedule says there 4,763. This appears to be a misprint. Please make the necessary so the correct number of policyholders will be the same.

### **Objection 2**

- Notice of Premium Increase, FR2251-VA-1 (0618) (Form)

Comments: 14VAC5-100-50 2 requires that the full and proper name of the insurer should appear on the front page of the Policyholder Notice of Premium Increase letter, in addition to the home office address, which may be limited to the city and state where the home office of the insurer is located.

### **Conclusion:**

We shall be glad to reconsider this submission upon receipt of the revised information necessary to address the objections noted above. Should you need clarification of any of the information contained in this letter, please contact the undersigned.

A response to this objection (or request for information if more applicable) is expected within 30 days. After 30 days, the filing will be DISAPPROVED unless a 30-day extension is requested.

Once a submission has been closed, a new SERFF submission will be required. To expedite the review, the new submission should reference the SERFF tracking number of the prior submission and verify that all outstanding issues have been addressed.

Should you wish to discuss any of the objections or provide additional information related to any of the objections, this should be done prior to making a new SERFF submission.

Thank you for your courtesy and consideration in this matter.

Sincerely,  
Bobby Toone

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**State:** Virginia **Filing Company:** Massachusetts Mutual Life Insurance Company  
**TOI/Sub-TOI:** LTC03I Individual Long Term Care/LTC03I.001 Qualified  
**Product Name:** Long-Term Care  
**Project Name/Number:** MassMutual LTC Rate Increase Filing/145MML01-10.02

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## Objection Letter

Objection Letter Status	Info has been requested from company
Objection Letter Date	02/14/2019
Submitted Date	02/14/2019
Respond By Date	03/15/2019

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Dear Shawn Stender,

### **Introduction:**

Thank you for your response, however one or more items included within the submission were found to be in non-conformity with statutory, regulatory or administrative requirements as set forth below.

### **Objection 1**

- L&H Actuarial Memorandum (Supporting Document)

Comments: Please state how many policies are pre-stability (issued prior to 10/1/2003), and how many are post-stability (issued on or after 10/1/2003).

### **Conclusion:**

We shall be glad to reconsider this submission upon receipt of the revised information necessary to address the objections noted above. Should you need clarification of any of the information contained in this letter, please contact the undersigned.

A response to this objection (or request for information if more applicable) is expected within 30 days. After 30 days, the filing will be DISAPPROVED unless a 30-day extension is requested.

Once a submission has been closed, a new SERFF submission will be required. To expedite the review, the new submission should reference the SERFF tracking number of the prior submission and verify that all outstanding issues have been addressed.

Should you wish to discuss any of the objections or provide additional information related to any of the objections, this should be done prior to making a new SERFF submission.

Thank you for your courtesy and consideration in this matter.

Sincerely,  
Bobby Toone

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**State:** Virginia **Filing Company:** Massachusetts Mutual Life Insurance Company  
**TOI/Sub-TOI:** LTC03I Individual Long Term Care/LTC03I.001 Qualified  
**Product Name:** Long-Term Care  
**Project Name/Number:** MassMutual LTC Rate Increase Filing/145MML01-10.02

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## Objection Letter

Objection Letter Status	Info has been requested from company
Objection Letter Date	10/01/2018
Submitted Date	10/01/2018
Respond By Date	

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Dear Shawn Stender,

**Introduction:**

*An initial review of this filing indicates the following concerns and questions.*

*Please note, any revisions, modifications or changes of any type to a rate or form not specifically requested by us should be brought to our attention upon resubmission and explained in detail.*

### Objection 1

- Rate Tables, [MM-200-P-VA et al.] (Rate)
- Rate Tables , [MM-300-P-VA et al.] (Rate)
- Rate Tables , [MM-400-P-VA et al.] (Rate)
- Rate Tables , [MM500-P-VA, MM501-P-VA, et al.] (Rate)
- Rate Tables , [MM500-P-1-VA, MM501-P-1-VA, et al.] (Rate)

*Comments: Please revise the Rate Action Information section of the Rate/Rule Schedule by providing the Previous State Filing Number used when each form was submitted to the BOI for approval.*

### Objection 2

- Rate Tables, [MM-200-P-VA et al.] (Rate)
- Rate Tables , [MM-300-P-VA et al.] (Rate)
- Rate Tables , [MM-400-P-VA et al.] (Rate)
- Rate Tables , [MM500-P-VA, MM501-P-VA, et al.] (Rate)
- Rate Tables , [MM500-P-1-VA, MM501-P-1-VA, et al.] (Rate)

*Comments: Please revise the Affected Form Numbers section of the Rate/Rule Schedule by removing "et al." and including all form numbers affected by this filing.*

### Conclusion:

*We shall be glad to reconsider this submission upon receipt of the revised information necessary to address the objections noted above. Should you need clarification of any of the information contained in this letter, please contact the undersigned.*

*Thank you for your courtesy and consideration in this matter.*

Sincerely,  
Bobby Toone

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

## Response Letter

Response Letter Status	Submitted to State
Response Letter Date	04/26/2021
Submitted Date	04/27/2021

Dear Bobby Toone,

### **Introduction:**

Thank you for reviewing this filing. Please see the attached documents in response to the April 20, 2021 objection letter. Please note that the attached documents were prepared by MassMutual. Milliman did not audit the attached documents, but did review them for reasonableness.

### **Response 1**

#### **Comments:**

The letter and SOV have been revised as requested. Please note, a revised Personalized Options Election Form and corresponding SOV reflecting the same change have also been included.

### **Related Objection 1**

Applies To:

- Notice of Premium Increase, FR2251-VA-1 (0820) (Form)

Comments: The Bureau notes that the company logo is not bracketed, nor does it have to be. In the past we have had carriers consider their logo to be variable whether or not they bracket it. Please confirm that you don't consider your logo to be variable.

If the logo is considered variable, please put it in brackets and add an explanation to the SOV.

### **Changed Items:**



<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

Supporting Document Schedule Item Changes	
<b>Satisfied - Item:</b>	Certification of Compliance
<b>Comments:</b>	
<b>Attachment(s):</b>	VA Certificate of Compliance 20210426.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20210217.pdf</i>
<i>Previous Version</i>	
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<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20210201.pdf</i>
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<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20201202.pdf</i>
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<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20201106.pdf</i>
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<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200812.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200616.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200429.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>

State:	Virginia	Filing Company:	Massachusetts Mutual Life Insurance Company
TOI/Sub-TOI:	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
Product Name:	Long-Term Care		
Project Name/Number:	MassMutual LTC Rate Increase Filing/145MML01-10.02		

Comments:	
Attachment(s):	VA Certificate of Compliance 20200323.pdf
Previous Version	
Satisfied - Item:	Certification of Compliance
Comments:	
Attachment(s):	VA Certificate of Compliance 20190827 signed.pdf
Previous Version	
Satisfied - Item:	Certification of Compliance
Comments:	
Attachment(s):	VA Certificate of Compliance 20181026 signed.pdf
Previous Version	
Satisfied - Item:	Certification of Compliance
Comments:	
Attachment(s):	VA Certificate of Compliance.pdf

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

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<b>Satisfied - Item:</b>	Certification of Compliance
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<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20201106.pdf</i>
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<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200812.pdf</i>
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<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200616.pdf</i>
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<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200323.pdf</i>
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<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20190827 signed.pdf</i>
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<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20181026 signed.pdf</i>
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<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance.pdf</i>

<b>Satisfied - Item:</b>	L&H Readability - Health
<b>Comments:</b>	
<b>Attachment(s):</b>	Notification Letter 20210426 VA Readability Certification.pdf
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<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
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<b>Attachment(s):</b>	<i>Notification Letter 20210217 VA Readability Certification.pdf</i>
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<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20210129 VA Readability Certification.pdf</i>
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<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

<b>Attachment(s):</b>	<i>Notification Letter 20201202 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20201106 VA Readability Certification.pdf</i>
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<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20200812 VA Readability Certification.pdf</i>
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<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20200616 VA Readability Certification.pdf Election Form 20200429 VA Readability Certification.pdf</i>
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<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20200429 VA Readability Certification.pdf Election Form 20200429 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20200323 VA Readability Certification.pdf Election Form 20200323 VA Readability Certification.pdf</i>
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<b>Comments:</b>	
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<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20190424 VA Readability Certification.pdf</i>
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<b>Comments:</b>	

<b>SERFF Tracking #:</b>	MILL-131569310	<b>State Tracking #:</b>	MILL-131569310	<b>Company Tracking #:</b>	MASSMUTUAL
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<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

<b>Attachment(s):</b>	<i>Notification Letter 20181026 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20180824 VA Readability Certification.pdf</i>

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

Supporting Document Schedule Item Changes	
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<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20201202.pdf</i>
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<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20201106.pdf</i>
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<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200812.pdf</i>
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<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200616.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200429.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200323.pdf</i>
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<b>Comments:</b>	
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<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
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<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance.pdf</i>

<b>Satisfied - Item:</b>	L&H Readability - Health
<b>Comments:</b>	
<b>Attachment(s):</b>	Notification Letter 20210426 VA Readability Certification.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20210217 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20210129 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	



<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

<b>Attachment(s):</b>	<i>Notification Letter 20201202 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20201106 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20200812 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20200616 VA Readability Certification.pdf</i> <i>Election Form 20200429 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20200429 VA Readability Certification.pdf</i> <i>Election Form 20200429 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20200323 VA Readability Certification.pdf</i> <i>Election Form 20200323 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20190827 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20190424 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

<b>Attachment(s):</b>	<i>Notification Letter 20181026 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20180824 VA Readability Certification.pdf</i>

<b>Satisfied - Item:</b>	Statement of Variability
<b>Comments:</b>	
<b>Attachment(s):</b>	SOV for FR2251-VA-1 (0820) 202104.pdf SOV for FR2251EF-VA 202104.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>SOV for FR2251-VA-1 (0820).pdf</i> <i>SOV for FR2251EF-VA.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>SOV for FR2251-VA-1 (0820).pdf</i> <i>SOV for FR2251EF-VA.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>SOV for FR2251-VA-1 (0820).pdf</i> <i>SOV for FR2251EF-VA.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>SOV for FR2251-VA-1 (0820).pdf</i>

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

	<i>SOV for FR2251EF-VA.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Statement of Variability Notification Letter 20200616 VA.pdf Statement of Variability Election Form 20200429 VA.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Statement of Variability Notification Letter 20200429 VA.pdf Statement of Variability Election Form 20200429 VA.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Statement of Variability Notification Letter 20200323 VA.pdf Statement of Variability Election Form 20200323 VA.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Statement of Variability 20190827 VA.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>FR2251-VA-1 (0618).SOV.20190424.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>FR2251-VA-1 (0618).SOV.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>FR2251-VA-1 (0618).SOV.pdf</i>

<b>SERFF Tracking #:</b>	MILL-131569310	<b>State Tracking #:</b>	MILL-131569310	<b>Company Tracking #:</b>	MASSMUTUAL
<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company		
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified				
<b>Product Name:</b>	Long-Term Care				
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02				

State: Virginia Filing Company: Massachusetts Mutual Life Insurance Company  
 TOI/Sub-TOI: LTC03I Individual Long Term Care/LTC03I.001 Qualified  
 Product Name: Long-Term Care  
 Project Name/Number: MassMutual LTC Rate Increase Filing/145MML01-10.02

Form Schedule Item Changes								
Item No.	Form Name	Form Number	Form Type	Form Action	Action Specific Data	Readability Score	Attachments	Submitted
1	Notice of Premium Increase	FR2251-VA-1 (0820)	OTH	Initial		40.100	FR2251-VA-1 (0820) 202104.pdf	Date Submitted: 04/27/2021 By: Alex Moore
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0820)	OTH	Initial		40.100	FR2251-VA-1 (0820).pdf	Date Submitted: 02/18/2021 By: Jack Bridges
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0820)	OTH	Initial		40.700	FR2251-VA-1 (0820).pdf	Date Submitted: 02/01/2021 By: Jack Bridges
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0820)	OTH	Initial		40.300	FR2251-VA-1 (0820).pdf	Date Submitted: 12/02/2020 By: Shawn Stender
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0820)	OTH	Initial		40.100	FR2251-VA-1 (0820).pdf	Date Submitted: 11/09/2020 By: Shawn Stender
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0820)	OTH	Initial		40.300	FR2251-VA-1 (0820).pdf	Date Submitted: 08/13/2020 By: Shawn Stender
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0420)	OTH	Initial		40.000	Notification Letter 20200616 VA with form number.pdf	Date Submitted: 06/17/2020 By:
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0420)	OTH	Initial		40.300	Notification Letter 20200429 VA with form number.pdf	Date Submitted: 04/30/2020 By: Shawn Stender
Previous Version								

State: Virginia Filing Company: Massachusetts Mutual Life Insurance Company  
 TOI/Sub-TOI: LTC03I Individual Long Term Care/LTC03I.001 Qualified  
 Product Name: Long-Term Care  
 Project Name/Number: MassMutual LTC Rate Increase Filing/145MML01-10.02

Form Schedule Item Changes								
Item No.	Form Name	Form Number	Form Type	Form Action	Action Specific Data	Readability Score	Attachments	Submitted
1	Notice of Premium Increase	FR2251-VA-1 (0820)	OTH	Initial		40.100	FR2251-VA-1 (0820) 202104.pdf	Date Submitted: 04/27/2021 By: Alex Moore
1	Notice of Premium Increase	FR2251-VA-1 (0320)	OTH	Initial		40.300	Notification Letter 20200323 VA with form number.pdf	Date Submitted: 03/27/2020 By: Shawn Stender
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0819)	OTH	Initial		40.400	Notification Letter 20190827 VA with form number.pdf	Date Submitted: 09/05/2019 By:
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0618)	OTH	Initial		40.600	Notification Letter 20190424 VA with form number.pdf	Date Submitted: 04/29/2019 By: Andrea Steffan
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0618)	OTH	Initial		40.600	Notification Letter 20181023 VA with form number.pdf	Date Submitted: 11/02/2018 By:
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0618)	OTH	Initial		40.500	Notification Letter 20180822 VA with form number.pdf	Date Submitted: 08/30/2018 By: Shawn Stender
2	Personalized Options Election Form	FR2251EF-VA (0820)	OTH	Initial		42.100	FR2251EF-VA 202104.pdf	Date Submitted: 04/27/2021 By: Alex Moore
Previous Version								
2	Personalized Options Election Form	FR2251EF-VA (0820)	OTH	Initial		42.100	FR2251EF-VA.pdf	Date Submitted: 08/13/2020 By: Shawn Stender
Previous Version								
2	Personalized	FR2251EF-VA	OTH	Initial		42.100	Election Form	Date Submitted:

State: Virginia Filing Company: Massachusetts Mutual Life Insurance Company  
 TOI/Sub-TOI: LTC03I Individual Long Term Care/LTC03I.001 Qualified  
 Product Name: Long-Term Care  
 Project Name/Number: MassMutual LTC Rate Increase Filing/145MML01-10.02

Form Schedule Item Changes								
Item No.	Form Name	Form Number	Form Type	Form Action	Action Specific Data	Readability Score	Attachments	Submitted
1	Notice of Premium Increase	FR2251-VA-1 (0820)	OTH	Initial		40.100	FR2251-VA-1 (0820) 202104.pdf	Date Submitted: 04/27/2021 By: Alex Moore
	Options Election Form	(0420)					20200429 VA.pdf	04/30/2020 By: Shawn Stender
Previous Version								
2	Personalized Options Election Form	FR2251EF-VA (0320)	OTH	Initial		42.100	Election Form 20200323 VA.pdf	Date Submitted: 03/27/2020 By: Shawn Stender

No Rate/Rule Schedule items changed.

## Response 2

### Comments:

The letter was revised as requested.

## Related Objection 2

Applies To:

- Notice of Premium Increase, FR2251-VA-1 (0820) (Form)

Comments: On page 4 of the letter, in the section under "Possible future changes", please clarify the second sentence by including something like "similar options will be offered".

## Changed Items:

No Supporting Documents changed.

No Form Schedule items changed.

No Rate/Rule Schedule items changed.

## Conclusion:

Thank you for working with us to complete this filing. Please let us know if you have any additional questions.

Sincerely,

Alex Moore

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**State:** Virginia **Filing Company:** Massachusetts Mutual Life Insurance Company  
**TOI/Sub-TOI:** LTC03I Individual Long Term Care/LTC03I.001 Qualified  
**Product Name:** Long-Term Care  
**Project Name/Number:** MassMutual LTC Rate Increase Filing/145MML01-10.02

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## Response Letter

Response Letter Status	Submitted to State
Response Letter Date	04/08/2021
Submitted Date	04/08/2021

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Dear Bobby Toone,

**Introduction:**

Thank you for reviewing this filing.

**Response 1**

**Comments:**

Acknowledging the filing is moving to the forms review portion.

**Related Objection 1**

Comments: The rate portion of this filing is complete, however, the filing cannot be approved until the forms review is complete. No response to this objection is required.

**Changed Items:**

No Supporting Documents changed.

No Form Schedule items changed.

No Rate/Rule Schedule items changed.

**Conclusion:**

Thank you for working with us to complete this filing. Please let us know if you have any additional questions.

Sincerely,

Alex Moore



<b>SERFF Tracking #:</b>	MILL-131569310	<b>State Tracking #:</b>	MILL-131569310	<b>Company Tracking #:</b>	MASSMUTUAL
<hr/>					
<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company		
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified				
<b>Product Name:</b>	Long-Term Care				
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02				

## Response Letter

Response Letter Status	Submitted to State
Response Letter Date	02/09/2021
Submitted Date	02/18/2021

Dear Bobby Toone,

### **Introduction:**

Thank you for reviewing this filing. Please see the attached documents and written responses in response to the February 8, 2021 objection letter. Please note that the attached documents and written responses were prepared by MassMutual. Milliman did not audit the attached documents or written responses, but did review them for reasonableness.

### **Response 1**

#### **Comments:**

The letter was revised as requested.

### **Related Objection 1**

Applies To:

- Notice of Premium Increase, FR2251-VA-1 (0820) (Form)

Comments: The first time the company is named in the body of the letter, it should be the company's full legal name with MassMutual in parentheses. Please correct.

### **Changed Items:**

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

Supporting Document Schedule Item Changes	
<b>Satisfied - Item:</b>	Certification of Compliance
<b>Comments:</b>	
<b>Attachment(s):</b>	VA Certificate of Compliance 20210217.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20210201.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20201202.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20201106.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200812.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200616.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200429.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200323.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>

State:	Virginia	Filing Company:	Massachusetts Mutual Life Insurance Company
TOI/Sub-TOI:	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
Product Name:	Long-Term Care		
Project Name/Number:	MassMutual LTC Rate Increase Filing/145MML01-10.02		

Comments:	
Attachment(s):	VA Certificate of Compliance 20190827 signed.pdf
Previous Version	
Satisfied - Item:	Certification of Compliance
Comments:	
Attachment(s):	VA Certificate of Compliance 20181026 signed.pdf
Previous Version	
Satisfied - Item:	Certification of Compliance
Comments:	
Attachment(s):	VA Certificate of Compliance.pdf

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

Supporting Document Schedule Item Changes	
<b>Satisfied - Item:</b>	Certification of Compliance
<b>Comments:</b>	
<b>Attachment(s):</b>	VA Certificate of Compliance 20210217.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20210201.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20201202.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20201106.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200812.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200616.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200429.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200323.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20190827 signed.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20181026 signed.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance.pdf</i>

<b>Satisfied - Item:</b>	L&H Readability - Health
<b>Comments:</b>	
<b>Attachment(s):</b>	Notification Letter 20210217 VA Readability Certification.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20210129 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20201202 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20201106 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

<b>Attachment(s):</b>	<i>Notification Letter 20200812 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20200616 VA Readability Certification.pdf Election Form 20200429 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20200429 VA Readability Certification.pdf Election Form 20200429 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
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<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20190827 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20190424 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20181026 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20180824 VA Readability Certification.pdf</i>

<b>SERFF Tracking #:</b>	MILL-131569310	<b>State Tracking #:</b>	MILL-131569310	<b>Company Tracking #:</b>	MASSMUTUAL
<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company		
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified				
<b>Product Name:</b>	Long-Term Care				
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02				

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

Supporting Document Schedule Item Changes	
<b>Satisfied - Item:</b>	Certification of Compliance
<b>Comments:</b>	
<b>Attachment(s):</b>	VA Certificate of Compliance 20210217.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20210201.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20201202.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20201106.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200812.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200616.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200429.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200323.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>



<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20190827 signed.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20181026 signed.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance.pdf</i>

<b>Satisfied - Item:</b>	L&H Readability - Health
<b>Comments:</b>	
<b>Attachment(s):</b>	Notification Letter 20210217 VA Readability Certification.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20210129 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20201202 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20201106 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

<b>Attachment(s):</b>	<i>Notification Letter 20200812 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
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<i>Previous Version</i>	
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<b>Comments:</b>	
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<i>Previous Version</i>	
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<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20200323 VA Readability Certification.pdf Election Form 20200323 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20190827 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20190424 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20181026 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20180824 VA Readability Certification.pdf</i>

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

<b>Satisfied - Item:</b>	Statement of Variability
<b>Comments:</b>	
<b>Attachment(s):</b>	SOV for FR2251-VA-1 (0820).pdf SOV for FR2251EF-VA.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>SOV for FR2251-VA-1 (0820).pdf SOV for FR2251EF-VA.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>SOV for FR2251-VA-1 (0820).pdf SOV for FR2251EF-VA.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>SOV for FR2251-VA-1 (0820).pdf SOV for FR2251EF-VA.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Statement of Variability Notification Letter 20200616 VA.pdf Statement of Variability Election Form 20200429 VA.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Statement of Variability Notification Letter 20200429 VA.pdf Statement of Variability Election Form 20200429 VA.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Statement of Variability Notification Letter 20200323 VA.pdf</i>

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

	<i>Statement of Variability Election Form 20200323 VA.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Statement of Variability 20190827 VA.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>FR2251-VA-1 (0618).SOV.20190424.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>FR2251-VA-1 (0618).SOV.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>FR2251-VA-1 (0618).SOV.pdf</i>

State: Virginia Filing Company: Massachusetts Mutual Life Insurance Company  
 TOI/Sub-TOI: LTC03I Individual Long Term Care/LTC03I.001 Qualified  
 Product Name: Long-Term Care  
 Project Name/Number: MassMutual LTC Rate Increase Filing/145MML01-10.02

Form Schedule Item Changes								
Item No.	Form Name	Form Number	Form Type	Form Action	Action Specific Data	Readability Score	Attachments	Submitted
1	Notice of Premium Increase	FR2251-VA-1 (0820)	OTH	Initial		40.100	FR2251-VA-1 (0820).pdf	Date Submitted: 02/18/2021 By: Jack Bridges
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0820)	OTH	Initial		40.700	FR2251-VA-1 (0820).pdf	Date Submitted: 02/01/2021 By: Jack Bridges
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0820)	OTH	Initial		40.300	FR2251-VA-1 (0820).pdf	Date Submitted: 12/02/2020 By: Shawn Stender
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0820)	OTH	Initial		40.100	FR2251-VA-1 (0820).pdf	Date Submitted: 11/09/2020 By: Shawn Stender
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0820)	OTH	Initial		40.300	FR2251-VA-1 (0820).pdf	Date Submitted: 08/13/2020 By: Shawn Stender
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0420)	OTH	Initial		40.000	Notification Letter 20200616 VA with form number.pdf	Date Submitted: 06/17/2020 By:
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0420)	OTH	Initial		40.300	Notification Letter 20200429 VA with form number.pdf	Date Submitted: 04/30/2020 By: Shawn Stender
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0320)	OTH	Initial		40.300	Notification Letter 20200323 VA with form number.pdf	Date Submitted: 03/27/2020 By: Shawn Stender

State: Virginia Filing Company: Massachusetts Mutual Life Insurance Company  
 TOI/Sub-TOI: LTC03I Individual Long Term Care/LTC03I.001 Qualified  
 Product Name: Long-Term Care  
 Project Name/Number: MassMutual LTC Rate Increase Filing/145MML01-10.02

Form Schedule Item Changes								
Item No.	Form Name	Form Number	Form Type	Form Action	Action Specific Data	Readability Score	Attachments	Submitted
1	Notice of Premium Increase	FR2251-VA-1 (0820)	OTH	Initial		40.100	FR2251-VA-1 (0820).pdf	Date Submitted: 02/18/2021 By: Jack Bridges
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0819)	OTH	Initial		40.400	Notification Letter 20190827 VA with form number.pdf	Date Submitted: 09/05/2019 By:
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0618)	OTH	Initial		40.600	Notification Letter 20190424 VA with form number.pdf	Date Submitted: 04/29/2019 By: Andrea Steffan
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0618)	OTH	Initial		40.600	Notification Letter 20181023 VA with form number.pdf	Date Submitted: 11/02/2018 By:
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0618)	OTH	Initial		40.500	Notification Letter 20180822 VA with form number.pdf	Date Submitted: 08/30/2018 By: Shawn Stender

No Rate/Rule Schedule items changed.

## Response 2

### Comments:

As requested, the company has revised the language in the applicable paragraph to be more specific.

## Related Objection 2

Applies To:

- Notice of Premium Increase, FR2251-VA-1 (0820) (Form)

Comments: The third paragraph on page 1 is unclear as to the specific reasons for the rate increase. Please provide more specific reasons for the requested increase. These reasons may be that people are staying on claim longer, resulting in higher claim costs; fewer people are dropping their policies, which results in more people filing claims. Please make the necessary revisions to clarify this paragraph.

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

**Changed Items:**

*No Supporting Documents changed.*

*No Form Schedule items changed.*

*No Rate/Rule Schedule items changed.*

**Response 3**

**Comments:**

*The paragraph indicated in the objection has been moved to the location requested.*

**Related Objection 3**

*Applies To:*

*- Notice of Premium Increase, FR2251-VA-1 (0820) (Form)*

*Comments: It appears to, the Bureau, that the third paragraph on page 2 is out of place and would fit better in the section on page 2 beginning with "Understanding your options".*

**Changed Items:**

*No Supporting Documents changed.*

*No Form Schedule items changed.*

*No Rate/Rule Schedule items changed.*

**Response 4**

**Comments:**

*The company has moved the paragraph referencing the benefit schedule page up by one paragraph. This allows the paragraph that already references the Personalized Option Election Form to be immediately prior to the paragraph referenced in the objection. The company believes that this solution addresses the desire to reference the Personalized Option Election Form in approximately the location referenced in the objection.*

**Related Objection 4**

*Applies To:*

*- Notice of Premium Increase, FR2251-VA-1 (0820) (Form)*

*Comments: The second paragraph on page 3 that begins with, "You always have the option..." seems to be a good place to refer policyholders to the Personalized Options election Form.*

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

**Changed Items:**

*No Supporting Documents changed.*

*No Form Schedule items changed.*

*No Rate/Rule Schedule items changed.*

**Conclusion:**

*Thank you for working with us to complete this filing. Please let us know if you have any additional questions.*

*Sincerely,*

*Jack Bridges*



<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

## Response Letter

Response Letter Status	Submitted to State
Response Letter Date	01/28/2021
Submitted Date	02/01/2021

Dear Bobby Toone,

### **Introduction:**

Thank you for reviewing this filing. Please see the attached documents and written response in response to the January 27, 2021 objection letter. Please note that the attached documents and written response were prepared by MassMutual. Milliman did not audit the attached documents or written response, but did review them for reasonableness.

### **Response 1**

#### **Comments:**

The company has revised the language in the applicable paragraph as suggested in the objection.

### **Related Objection 1**

Applies To:

- Notice of Premium Increase, FR2251-VA-1 (0820) (Form)

Comments: We have a concern with the first sentence in the last paragraph on page 3 that seems to imply the State Department/Bureau of Insurance provides "counseling to help determine how to proceed." It appears to give a policyholder the impression that the BOI can assist the policyholder with choosing an option.

Please revise this sentence or remove it. Should the company wish to keep it, an example of revised language could be something similar to, "You may also contact your State Department/Bureau of Insurance for help in understanding your long-term care policy."

### **Changed Items:**

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

Supporting Document Schedule Item Changes	
<b>Satisfied - Item:</b>	Certification of Compliance
<b>Comments:</b>	
<b>Attachment(s):</b>	VA Certificate of Compliance 20210201.pdf
<i>Previous Version</i>	
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<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20201202.pdf</i>
<i>Previous Version</i>	
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<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20201106.pdf</i>
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<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200812.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200616.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
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<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200323.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20190827 signed.pdf</i>
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<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>

<b>SERFF Tracking #:</b>	MILL-131569310	<b>State Tracking #:</b>	MILL-131569310	<b>Company Tracking #:</b>	MASSMUTUAL
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<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20181026 signed.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance.pdf</i>

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
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<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
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<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20181026 signed.pdf</i>
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<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance.pdf</i>

<b>Satisfied - Item:</b>	L&H Readability - Health
<b>Comments:</b>	
<b>Attachment(s):</b>	Notification Letter 20210129 VA Readability Certification.pdf
<i>Previous Version</i>	
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<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20200616 VA Readability Certification.pdf</i> <i>Election Form 20200429 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

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<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20200323 VA Readability Certification.pdf</i> <i>Election Form 20200323 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20190827 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20190424 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20181026 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20180824 VA Readability Certification.pdf</i>

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

Supporting Document Schedule Item Changes	
<b>Satisfied - Item:</b>	Certification of Compliance
<b>Comments:</b>	
<b>Attachment(s):</b>	VA Certificate of Compliance 20210201.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20201202.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20201106.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200812.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200616.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200429.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
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<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
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<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20181026 signed.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance.pdf</i>

<b>Satisfied - Item:</b>	L&H Readability - Health
<b>Comments:</b>	
<b>Attachment(s):</b>	Notification Letter 20210129 VA Readability Certification.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20201202 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
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<b>Comments:</b>	
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<i>Previous Version</i>	
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<b>Comments:</b>	
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<i>Previous Version</i>	
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<b>Attachment(s):</b>	<i>Notification Letter 20200616 VA Readability Certification.pdf</i> <i>Election Form 20200429 VA Readability Certification.pdf</i>
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<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
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<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

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<i>Previous Version</i>	
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<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20190424 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20181026 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20180824 VA Readability Certification.pdf</i>

<b>Satisfied - Item:</b>	Statement of Variability
<b>Comments:</b>	
<b>Attachment(s):</b>	SOV for FR2251-VA-1 (0820).pdf SOV for FR2251EF-VA.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

<b>Comments:</b>	
<b>Attachment(s):</b>	SOV for FR2251-VA-1 (0820).pdf SOV for FR2251EF-VA.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	Statement of Variability
<b>Comments:</b>	
<b>Attachment(s):</b>	SOV for FR2251-VA-1 (0820).pdf SOV for FR2251EF-VA.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	Statement of Variability
<b>Comments:</b>	
<b>Attachment(s):</b>	Statement of Variability Notification Letter 20200616 VA.pdf Statement of Variability Election Form 20200429 VA.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	Statement of Variability
<b>Comments:</b>	
<b>Attachment(s):</b>	Statement of Variability Notification Letter 20200429 VA.pdf Statement of Variability Election Form 20200429 VA.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	Statement of Variability
<b>Comments:</b>	
<b>Attachment(s):</b>	Statement of Variability Notification Letter 20200323 VA.pdf Statement of Variability Election Form 20200323 VA.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	Statement of Variability
<b>Comments:</b>	
<b>Attachment(s):</b>	Statement of Variability 20190827 VA.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	Statement of Variability
<b>Comments:</b>	
<b>Attachment(s):</b>	FR2251-VA-1 (0618).SOV.20190424.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	Statement of Variability
<b>Comments:</b>	
<b>Attachment(s):</b>	FR2251-VA-1 (0618).SOV.pdf
<i>Previous Version</i>	

<b>SERFF Tracking #:</b>	MILL-131569310	<b>State Tracking #:</b>	MILL-131569310	<b>Company Tracking #:</b>	MASSMUTUAL
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<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>FR2251-VA-1 (0618).SOV.pdf</i>

State: Virginia Filing Company: Massachusetts Mutual Life Insurance Company  
 TOI/Sub-TOI: LTC03I Individual Long Term Care/LTC03I.001 Qualified  
 Product Name: Long-Term Care  
 Project Name/Number: MassMutual LTC Rate Increase Filing/145MML01-10.02

Form Schedule Item Changes								
Item No.	Form Name	Form Number	Form Type	Form Action	Action Specific Data	Readability Score	Attachments	Submitted
1	Notice of Premium Increase	FR2251-VA-1 (0820)	OTH	Initial		40.700	FR2251-VA-1 (0820).pdf	Date Submitted: 02/01/2021 By: Jack Bridges
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0820)	OTH	Initial		40.300	FR2251-VA-1 (0820).pdf	Date Submitted: 12/02/2020 By: Shawn Stender
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0820)	OTH	Initial		40.100	FR2251-VA-1 (0820).pdf	Date Submitted: 11/09/2020 By: Shawn Stender
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0820)	OTH	Initial		40.300	FR2251-VA-1 (0820).pdf	Date Submitted: 08/13/2020 By: Shawn Stender
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0420)	OTH	Initial		40.000	Notification Letter 20200616 VA with form number.pdf	Date Submitted: 06/17/2020 By:
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0420)	OTH	Initial		40.300	Notification Letter 20200429 VA with form number.pdf	Date Submitted: 04/30/2020 By: Shawn Stender
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0320)	OTH	Initial		40.300	Notification Letter 20200323 VA with form number.pdf	Date Submitted: 03/27/2020 By: Shawn Stender
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0819)	OTH	Initial		40.400	Notification Letter 20190827 VA with form	Date Submitted: 09/05/2019 By:

State: Virginia Filing Company: Massachusetts Mutual Life Insurance Company  
 TOI/Sub-TOI: LTC03I Individual Long Term Care/LTC03I.001 Qualified  
 Product Name: Long-Term Care  
 Project Name/Number: MassMutual LTC Rate Increase Filing/145MML01-10.02

Form Schedule Item Changes								
Item No.	Form Name	Form Number	Form Type	Form Action	Action Specific Data	Readability Score	Attachments	Submitted
1	Notice of Premium Increase	FR2251-VA-1 (0820)	OTH	Initial		40.700	FR2251-VA-1 (0820).pdf	Date Submitted: 02/01/2021 By: Jack Bridges
							number.pdf	
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0618)	OTH	Initial		40.600	Notification Letter 20190424 VA with form number.pdf	Date Submitted: 04/29/2019 By: Andrea Steffan
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0618)	OTH	Initial		40.600	Notification Letter 20181023 VA with form number.pdf	Date Submitted: 11/02/2018 By:
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0618)	OTH	Initial		40.500	Notification Letter 20180822 VA with form number.pdf	Date Submitted: 08/30/2018 By: Shawn Stender

No Rate/Rule Schedule items changed.

**Conclusion:**

Thank you for working with us to complete this filing. Please let us know if you have any additional questions.

Sincerely,

Jack Bridges

<b>SERFF Tracking #:</b>	MILL-131569310	<b>State Tracking #:</b>	MILL-131569310	<b>Company Tracking #:</b>	MASSMUTUAL
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<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company		
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified				
<b>Product Name:</b>	Long-Term Care				
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02				

## Response Letter

Response Letter Status	Submitted to State
Response Letter Date	12/01/2020
Submitted Date	12/02/2020

Dear Bobby Toone,

### **Introduction:**

Thank you for reviewing this filing. Please see the attached documents and written responses in response to the November 13, 2020 objection letter. Please note that the attached documents and written responses were prepared by MassMutual. Milliman did not audit the attached documents or written responses, but did review them for reasonableness.

### **Response 1**

#### **Comments:**

The company has added a statement that the policyowner will be able to reduce coverage once their premium is no longer being waived. The CBUL is only available for the 120-day period following the rate increase effective date, and the rate increase effective date is not impacted by the policys waiver of premium status.

The company understands from their conversation with the Department on 12/1/2020 that this approach is acceptable to the Department.

### **Related Objection 1**

Applies To:

- Notice of Premium Increase, FR2251-VA-1 (0820) (Form)

Comments: In the section about waiver of premium, please provide a statement explaining when a person on premium waiver will be expected to make any decisions about changes to their coverage. For example; will they be required to decide on these options while on waiver and may be experiencing reduced mental or physical capacity; or will they be given a period of time after they come off waiver to make these decisions?

### **Changed Items:**

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

Supporting Document Schedule Item Changes	
<b>Satisfied - Item:</b>	Certification of Compliance
<b>Comments:</b>	
<b>Attachment(s):</b>	VA Certificate of Compliance 20201202.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20201106.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200812.pdf</i>
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<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
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<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200616.pdf</i>
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<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
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<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20190827 signed.pdf</i>
<i>Previous Version</i>	
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<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20181026 signed.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>

<b>SERFF Tracking #:</b>	MILL-131569310	<b>State Tracking #:</b>	MILL-131569310	<b>Company Tracking #:</b>	MASSMUTUAL
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<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

<b>Comments:</b>	
<b>Attachment(s):</b>	VA Certificate of Compliance.pdf



<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
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<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200429.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200323.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20190827 signed.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20181026 signed.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance.pdf</i>

<b>Satisfied - Item:</b>	L&H Readability - Health
<b>Comments:</b>	
<b>Attachment(s):</b>	Notification Letter 20201202 VA Readability Certification.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20201106 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20200812 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20200616 VA Readability Certification.pdf Election Form 20200429 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20200429 VA Readability Certification.pdf Election Form 20200429 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20200323 VA Readability Certification.pdf Election Form 20200323 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20190827 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20190424 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20181026 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20180824 VA Readability Certification.pdf</i>

<b>Satisfied - Item:</b>	Statement of Variability
<b>Comments:</b>	
<b>Attachment(s):</b>	SOV for FR2251-VA-1 (0820).pdf SOV for FR2251EF-VA.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>SOV for FR2251-VA-1 (0820).pdf</i> <i>SOV for FR2251EF-VA.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Statement of Variability Notification Letter 20200616 VA.pdf</i> <i>Statement of Variability Election Form 20200429 VA.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Statement of Variability Notification Letter 20200429 VA.pdf</i> <i>Statement of Variability Election Form 20200429 VA.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Statement of Variability Notification Letter 20200323 VA.pdf</i> <i>Statement of Variability Election Form 20200323 VA.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Statement of Variability 20190827 VA.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>FR2251-VA-1 (0618).SOV.20190424.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>FR2251-VA-1 (0618).SOV.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>FR2251-VA-1 (0618).SOV.pdf</i>

State: Virginia Filing Company: Massachusetts Mutual Life Insurance Company  
 TOI/Sub-TOI: LTC03I Individual Long Term Care/LTC03I.001 Qualified  
 Product Name: Long-Term Care  
 Project Name/Number: MassMutual LTC Rate Increase Filing/145MML01-10.02

Form Schedule Item Changes								
Item No.	Form Name	Form Number	Form Type	Form Action	Action Specific Data	Readability Score	Attachments	Submitted
1	Notice of Premium Increase	FR2251-VA-1 (0820)	OTH	Initial		40.300	FR2251-VA-1 (0820).pdf	Date Submitted: 12/02/2020 By: Shawn Stender
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0820)	OTH	Initial		40.100	FR2251-VA-1 (0820).pdf	Date Submitted: 11/09/2020 By: Shawn Stender
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0820)	OTH	Initial		40.300	FR2251-VA-1 (0820).pdf	Date Submitted: 08/13/2020 By: Shawn Stender
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0420)	OTH	Initial		40.000	Notification Letter 20200616 VA with form number.pdf	Date Submitted: 06/17/2020 By:
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0420)	OTH	Initial		40.300	Notification Letter 20200429 VA with form number.pdf	Date Submitted: 04/30/2020 By: Shawn Stender
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0320)	OTH	Initial		40.300	Notification Letter 20200323 VA with form number.pdf	Date Submitted: 03/27/2020 By: Shawn Stender
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0819)	OTH	Initial		40.400	Notification Letter 20190827 VA with form number.pdf	Date Submitted: 09/05/2019 By:
Previous Version								
1	Notice of Premium	FR2251-VA-1 (0618)	OTH	Initial		40.600	Notification Letter 20190424 VA	Date Submitted: 04/29/2019



State: Virginia Filing Company: Massachusetts Mutual Life Insurance Company  
 TOI/Sub-TOI: LTC03I Individual Long Term Care/LTC03I.001 Qualified  
 Product Name: Long-Term Care  
 Project Name/Number: MassMutual LTC Rate Increase Filing/145MML01-10.02

Form Schedule Item Changes								
Item No.	Form Name	Form Number	Form Type	Form Action	Action Specific Data	Readability Score	Attachments	Submitted
1	Notice of Premium Increase	FR2251-VA-1 (0820)	OTH	Initial		40.300	FR2251-VA-1 (0820).pdf	Date Submitted: 12/02/2020 By: Shawn Stender
	<i>Increase</i>						<i>with form number.pdf</i>	<i>By: Andrea Steffan</i>
<i>Previous Version</i>								
1	Notice of Premium Increase	FR2251-VA-1 (0618)	OTH	Initial		40.600	Notification Letter 20181023 VA with form number.pdf	Date Submitted: 11/02/2018 By:
<i>Previous Version</i>								
1	Notice of Premium Increase	FR2251-VA-1 (0618)	OTH	Initial		40.500	Notification Letter 20180822 VA with form number.pdf	Date Submitted: 08/30/2018 By: Shawn Stender

No Rate/Rule Schedule items changed.

## Response 2

### Comments:

This language was previously added to page 3 of the notification letter. The company has moved the sentence to its own paragraph on page 3 to increase its prominence. The company has used wording consistent with the policy language, and believes this language satisfies the intent of the regulation that the policyowner has a right to the policy pages that contain the revised premium rates.

The company understands from their conversation with the Department on 12/1/2020 that this wording is acceptable to the Department and that the Department does not need copies of the relevant policy pages.

## Related Objection 2

Applies To:

- Notice of Premium Increase, FR2251-VA-1 (0820) (Form)

Comments: In compliance with 14VAC5-200-75 A 4(b), stating that the policyholder has the right to a revised premium rate or rate schedule in the event of future rate increases.

## Changed Items:

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

No Supporting Documents changed.

No Form Schedule items changed.

No Rate/Rule Schedule items changed.

### Response 3

#### Comments:

As a result of the companys conversation with the Department on 12/1/2020, the following changes are included in the notification letter:  
The company has added language that the terms of the Nonforfeiture Rider are described in the policy.  
The company has added language that the terms of the Contingent Benefit Upon Lapse option are described later in the packet.

### Related Objection 3

Applies To:

- Notice of Premium Increase, FR2251-VA-1 (0820) (Form)

Comments: In option 3 of "What you need to do", provide a description of the Contingent Benefit Upon Lapse Option or the Nonforfeiture option as described in either 14VAC5-200-185 E 3 or 14VAC5-200-185 D 6(b). This can be shown as variable and described in the Statement of Variability.

### Changed Items:

No Supporting Documents changed.

No Form Schedule items changed.

No Rate/Rule Schedule items changed.

### Response 4

#### Comments:

The company has updated the statement of variability to confirm that the date of the letter will comply with the notification period as described in the Actuarial Memorandum.

### Related Objection 4

Applies To:

- Statement of Variability (Supporting Document)
- Notice of Premium Increase, FR2251-VA-1 (0820) (Form)

Comments: Please revise the description of [Date] in the Statement of Variability to reflect that the policyholder will have at least a 90-day notification period prior to the premium increase effective date, as is stated in the Actuarial Memorandum.

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

**Changed Items:**

No Supporting Documents changed.

No Form Schedule items changed.

No Rate/Rule Schedule items changed.

**Response 5**

**Comments:**

The company has removed Please note that from the beginning of this statement to more closely match the language in 14VAC5-200-75 D 4. Based on the companys conversation with the Department on 12/1/2020, the company has also revised, Virginia Bureau of Insurance to Virginia State Corporation Commission in both locations in the referenced paragraph.

**Related Objection 5**

Applies To:

- Notice of Premium Increase, FR2251-VA-1 (0820) (Form)

Comments: For consistency, please revise the statement at the top of page 2 to more closely match the language in 14VAC5-200-75 D 4:

"The rate increase request was reviewed by the commission and was found to be compliant with applicable Virginia laws and regulations addressing long-term care insurance. All premium rate filings are available for public inspection and may be accessed online through the Virginia Bureau of Insurance's webpage at <https://scc.virginia.gov/boi/SERFFInquiry/LtcFilings.aspx>."

**Changed Items:**

No Supporting Documents changed.

No Form Schedule items changed.

No Rate/Rule Schedule items changed.

**Response 6**

**Comments:**

<b>SERFF Tracking #:</b>	MILL-131569310	<b>State Tracking #:</b>	MILL-131569310	<b>Company Tracking #:</b>	MASSMUTUAL
<hr/>					
<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company		
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified				
<b>Product Name:</b>	Long-Term Care				
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02				

*If the policyowner and insured are the same, then the policyowner would be mailed 1 copy of the letter and only the agent would receive a carbon copy. The company has revised the Statement of Variability for clarity.*

*If the insured is different than the policyowner, then the insured will receive a copy of the letter as a courtesy. The company acknowledges that the policyowner, and not the insured, has the authority to make changes to the policy.*

*The company understands from their conversation with the Department on 12/1/2020 that this is acceptable to the Department and revisions to the notification letter are not necessary.*

#### **Related Objection 6**

*Applies To:*

*- Notice of Premium Increase, FR2251-VA-1 (0820) (Form)*

*Comments: On page 5, where the "cc" is; please clarify why a copy of the letter would be sent to the insured, when the policyowner will already be receiving a copy. If the policyowner and insured are the same, this would indicate that they would be mailed 2 copies of the letter. If the policyowner and insured are different, then the insured would have no authority to act on the letter.*

#### **Changed Items:**

*No Supporting Documents changed.*

*No Form Schedule items changed.*

*No Rate/Rule Schedule items changed.*

#### **Conclusion:**

*Thank you for working with us to complete this filing. Please let us know if you have any additional questions.*

*Sincerely,*

*Shawn Stender*

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

## Response Letter

Response Letter Status	Submitted to State
Response Letter Date	11/06/2020
Submitted Date	11/09/2020

Dear Bobby Toone,

### **Introduction:**

Thank you for reviewing this filing. Please see the attached documents and written responses in response to the November 6, 2020 objection letter. Please note that the attached documents and written responses were prepared by MassMutual. Milliman did not audit the attached documents or written responses, but did review them for reasonableness.

### **Response 1**

#### **Comments:**

The closed bracket (]) on the line beneath the Rider Name 3 bullet pairs with the open bracket ([) at the beginning of the bullet that starts with Remove or reduce optional riders. This bullet was changed to variable text at the Departments request per objection 17 of the July 2, 2020 objection letter. The company has moved the open bracket one line up for clarity.

### **Related Objection 1**

Applies To:

- Notice of Premium Increase, FR2251-VA-1 (0820) (Form)

Comments: Please explain the closed bracket( ] ) on the line beneath the "Rider Name 3" bullet on page 3 of the letter.

### **Changed Items:**

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

Supporting Document Schedule Item Changes	
<b>Satisfied - Item:</b>	Certification of Compliance
<b>Comments:</b>	
<b>Attachment(s):</b>	VA Certificate of Compliance 20201106.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200812.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200616.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200429.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200323.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20190827 signed.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20181026 signed.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance.pdf</i>

<b>SERFF Tracking #:</b>	MILL-131569310	<b>State Tracking #:</b>	MILL-131569310	<b>Company Tracking #:</b>	MASSMUTUAL
<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company		
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified				
<b>Product Name:</b>	Long-Term Care				
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02				

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

Supporting Document Schedule Item Changes	
<b>Satisfied - Item:</b>	Certification of Compliance
<b>Comments:</b>	
<b>Attachment(s):</b>	VA Certificate of Compliance 20201106.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200812.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200616.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200429.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200323.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20190827 signed.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20181026 signed.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance.pdf</i>



<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
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<b>Satisfied - Item:</b>	L&H Readability - Health
<b>Comments:</b>	
<b>Attachment(s):</b>	Notification Letter 20201106 VA Readability Certification.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
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<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20190424 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	

<b>SERFF Tracking #:</b>	MILL-131569310	<b>State Tracking #:</b>	MILL-131569310	<b>Company Tracking #:</b>	MASSMUTUAL
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<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

<b>Attachment(s):</b>	<i>Notification Letter 20181026 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20180824 VA Readability Certification.pdf</i>

State: Virginia Filing Company: Massachusetts Mutual Life Insurance Company  
 TOI/Sub-TOI: LTC03I Individual Long Term Care/LTC03I.001 Qualified  
 Product Name: Long-Term Care  
 Project Name/Number: MassMutual LTC Rate Increase Filing/145MML01-10.02

Form Schedule Item Changes								
Item No.	Form Name	Form Number	Form Type	Form Action	Action Specific Data	Readability Score	Attachments	Submitted
1	Notice of Premium Increase	FR2251-VA-1 (0820)	OTH	Initial		40.100	FR2251-VA-1 (0820).pdf	Date Submitted: 11/09/2020 By: Shawn Stender
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0820)	OTH	Initial		40.300	FR2251-VA-1 (0820).pdf	Date Submitted: 08/13/2020 By: Shawn Stender
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0420)	OTH	Initial		40.000	Notification Letter 20200616 VA with form number.pdf	Date Submitted: 06/17/2020 By:
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0420)	OTH	Initial		40.300	Notification Letter 20200429 VA with form number.pdf	Date Submitted: 04/30/2020 By: Shawn Stender
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0320)	OTH	Initial		40.300	Notification Letter 20200323 VA with form number.pdf	Date Submitted: 03/27/2020 By: Shawn Stender
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0819)	OTH	Initial		40.400	Notification Letter 20190827 VA with form number.pdf	Date Submitted: 09/05/2019 By:
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0618)	OTH	Initial		40.600	Notification Letter 20190424 VA with form number.pdf	Date Submitted: 04/29/2019 By: Andrea Steffan
Previous Version								
1	Notice of Premium	FR2251-VA-1 (0618)	OTH	Initial		40.600	Notification Letter 20181023 VA	Date Submitted: 11/02/2018

State: Virginia Filing Company: Massachusetts Mutual Life Insurance Company  
 TOI/Sub-TOI: LTC03I Individual Long Term Care/LTC03I.001 Qualified  
 Product Name: Long-Term Care  
 Project Name/Number: MassMutual LTC Rate Increase Filing/145MML01-10.02

Form Schedule Item Changes								
Item No.	Form Name	Form Number	Form Type	Form Action	Action Specific Data	Readability Score	Attachments	Submitted
1	Notice of Premium Increase	FR2251-VA-1 (0820)	OTH	Initial		40.100	FR2251-VA-1 (0820).pdf	Date Submitted: 11/09/2020 By: Shawn Stender
	<i>Increase</i>						<i>with form number.pdf</i>	<i>By:</i>
<i>Previous Version</i>								
1	Notice of Premium Increase	FR2251-VA-1 (0618)	OTH	Initial		40.500	Notification Letter 20180822 VA with form number.pdf	Date Submitted: 08/30/2018 By: Shawn Stender

No Rate/Rule Schedule items changed.

## Response 2

### Comments:

The font size has been increased as requested.

## Related Objection 2

Applies To:

- Notice of Premium Increase, FR2251-VA-1 (0820) (Form)

Comments: There is still an issue of the prominence of the company name on page one, mainly because the bolded statement that begins with "RE:..." appears to be the same font size as the company name. If the company name were in a larger font, that would satisfy the regulation.

## Changed Items:

No Supporting Documents changed.

No Form Schedule items changed.

No Rate/Rule Schedule items changed.

## Response 3

### Comments:

The language has been updated as requested.

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

**Related Objection 3**

*Applies To:*

*- Notice of Premium Increase, FR2251-VA-1 (0820) (Form)*

*Comments: For consistency, please revise the first sentence of the first paragraph on page 2 to read, "....the rate increase request was reviewed by the Virginia Bureau of Insurance..."*

**Changed Items:**

*No Supporting Documents changed.*

*No Form Schedule items changed.*

*No Rate/Rule Schedule items changed.*

**Conclusion:**

*Thank you for working with us to complete this filing. Please let us know if you have any additional questions.*

*Sincerely,*

*Shawn Stender*

<b>SERFF Tracking #:</b>	MILL-131569310	<b>State Tracking #:</b>	MILL-131569310	<b>Company Tracking #:</b>	MASSMUTUAL
<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company		
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified				
<b>Product Name:</b>	Long-Term Care				
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02				

## Response Letter

Response Letter Status	Submitted to State
Response Letter Date	09/04/2020
Submitted Date	09/23/2020

Dear Bobby Toone,

### Introduction:

On behalf of Missy Gordon, thank you for reviewing this filing.

### Response 1

#### Comments:

Please see the attached document in response to your August 25 requests.

### Related Objection 1

Applies To:

- Response to October 21, 2019 Request (Supporting Document)

Comments: 1. As the minimum projected premium in this spreadsheet, is \$131 correct as an annual premium? Without providing any personal policyholder information, please provide the level of benefits that would be included in that premium level, including daily benefits, lifetime benefits, etc.

2. As the maximum projected premium listed, please show how an annual premium of \$46,859 is reasonable in relation to the benefits received. This would also include the types of benefits listed in the previous question.

3. Provide the same information requested above for projected annual premiums of \$3,374 (VA Policyholder count no. 4125) and \$12,137 (VA Policyholder count no. 2969).

4. Please provide actuarial justification for this range of increases in addition to bringing premiums in line with the 513 series of policies.

5. Provide an exhibit demonstrating how a premium is developed from the proposed rate sheets provided, including examples from the highest premium level, the lowest level, and some from the middle range.

### Changed Items:

Supporting Document Schedule Item Changes	
<b>Satisfied - Item:</b>	Response to August 25, 2020 Requests
<b>Comments:</b>	
<b>Attachment(s):</b>	VA_Response to 20200825 Objection_20200923.pdf

<b>SERFF Tracking #:</b>	MILL-131569310	<b>State Tracking #:</b>	MILL-131569310	<b>Company Tracking #:</b>	MASSMUTUAL
<hr/>					
<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company		
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified				
<b>Product Name:</b>	Long-Term Care				
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02				

No Form Schedule items changed.

No Rate/Rule Schedule items changed.

**Conclusion:**

Thank you for working with us to complete this filing. Please let us know if you have any additional questions.

Sincerely,

Jack Bridges

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<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

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## Response Letter

Response Letter Status	Submitted to State
Response Letter Date	08/03/2020
Submitted Date	08/12/2020

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Dear Bobby Toone,

### **Introduction:**

Thank you for reviewing this filing.

### **Response 1**

#### **Comments:**

The rate increase was determined to achieve a rate level consistent with that on the company's recently marketed 513 Series product. Thus, the resulting rate increase varies by rate series and all available options and riders. This rate increase is then capped on a seriatim basis such that no insured will receive a rate increase in excess of 100%. Capping the rate increase based on the 513 Series rate for a given insured results in higher average increases for richer benefits and younger issue ages, as shown in the seriatim listing provided on November 4, 2019. This methodology is described in additional detail in the cover letter and Section 2 of the actuarial memorandum dated August 30, 2018.

### **Related Objection 1**

Applies To:

- Response to October 21, 2019 Request (Supporting Document)

Comments: Thank you for sending the breakdown of pending increases. Please provide some clarification on how the increases were determined. We understand that every policyholder with a series 300 policy with Lifetime benefits and 5% compound inflation protection will get a 100% increase, but please explain why there is such a variety of increases.

### **Changed Items:**

No Supporting Documents changed.

No Form Schedule items changed.

No Rate/Rule Schedule items changed.

### **Conclusion:**

Thank you for working with us to complete this filing. Please let us know if you have any additional questions.

Sincerely,

Shawn Stender



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<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

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## Response Letter

Response Letter Status	Submitted to State
Response Letter Date	07/06/2020
Submitted Date	07/30/2020

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Dear Bobby Toone,

**Introduction:**

Thank you for reviewing this filing.

**Response 1**

**Comments:**

A specific breakdown of the requested rate increase can be found in the workbook titled "VA\_Response to 20191021 Request\_MML\_20191104.xlsx", which was provided in response to the objection letter dated October 21, 2019. This workbook provides seriatim requested rate increase information for Virginia insureds in force as of December 31, 2016 and includes information regarding age, policy series, benefit period, and inflation. As can be seen in this workbook, a 100% increase is being requested for all 300 Series insureds with an issue age of 65 and lifetime benefits with 5% compound auto inflation.

**Related Objection 1**

Applies To:

- L&H Actuarial Memorandum (Supporting Document)
- Supplement to the Actuarial Memorandum (Supporting Document)

Comments: Please provide a specific breakdown of how policyholders will be affected by this rate increase based on age, benefit levels, etc. In other words, if a policyholder is 65 years old with a 300 Series policy, that has a lifetime benefit period, with 5% compound inflation protection, how much would his rate increase be?

**Changed Items:**

No Supporting Documents changed.

No Form Schedule items changed.

No Rate/Rule Schedule items changed.

**Conclusion:**

Thank you for working with us to complete this filing. Please let us know if you have any additional questions.

Sincerely,

Shawn Stender

<b>SERFF Tracking #:</b>	MILL-131569310	<b>State Tracking #:</b>	MILL-131569310	<b>Company Tracking #:</b>	MASSMUTUAL
<hr/>					
<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company		
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified				
<b>Product Name:</b>	Long-Term Care				
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02				

## Response Letter

Response Letter Status	Submitted to State
Response Letter Date	07/17/2020
Submitted Date	08/13/2020

Dear Bobby Toone,

### **Introduction:**

Thank you for reviewing this filing. Please see the attached documents and written responses in response to the July 2, 2020 objection letter. Please note that the attached documents and written responses were prepared by MassMutual. Milliman did not audit the attached documents or written responses, but did review them for reasonableness.

### **Response 1**

#### **Comments:**

As requested, a sentence has been added to the notification letter to ensure the policyowner is aware of this right.

### **Related Objection 1**

Applies To:

- Notice of Premium Increase, FR2251-VA-1 (0420) (Form)

Comments: In compliance with 14VAC5-200-75 A 4(b), provide an statement that a policyholder has the right to a revised premium rate or rate schedule if the premium rate or rate schedule is changed.

### **Changed Items:**

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

Supporting Document Schedule Item Changes	
<b>Satisfied - Item:</b>	Certification of Compliance
<b>Comments:</b>	
<b>Attachment(s):</b>	VA Certificate of Compliance 20200812.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200616.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200429.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200323.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20190827 signed.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20181026 signed.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance.pdf</i>

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

Supporting Document Schedule Item Changes	
<b>Satisfied - Item:</b>	Certification of Compliance
<b>Comments:</b>	
<b>Attachment(s):</b>	VA Certificate of Compliance 20200812.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
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<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20181026 signed.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance.pdf</i>

<b>Satisfied - Item:</b>	L&H Readability - Health
<b>Comments:</b>	

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

<b>Attachment(s):</b>	Notification Letter 20200812 VA Readability Certification.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20200616 VA Readability Certification.pdf Election Form 20200429 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20200429 VA Readability Certification.pdf Election Form 20200429 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20200323 VA Readability Certification.pdf Election Form 20200323 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20190827 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20190424 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20181026 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20180824 VA Readability Certification.pdf</i>

<b>SERFF Tracking #:</b>	MILL-131569310	<b>State Tracking #:</b>	MILL-131569310	<b>Company Tracking #:</b>	MASSMUTUAL
<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company		
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified				
<b>Product Name:</b>	Long-Term Care				
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02				

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

Supporting Document Schedule Item Changes	
<b>Satisfied - Item:</b>	Certification of Compliance
<b>Comments:</b>	
<b>Attachment(s):</b>	VA Certificate of Compliance 20200812.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
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<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200616.pdf</i>
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<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200429.pdf</i>
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<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
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<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200323.pdf</i>
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<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20190827 signed.pdf</i>
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<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20181026 signed.pdf</i>
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<b>Attachment(s):</b>	<i>VA Certificate of Compliance.pdf</i>

<b>Satisfied - Item:</b>	L&H Readability - Health
<b>Comments:</b>	

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

<b>Attachment(s):</b>	Notification Letter 20200812 VA Readability Certification.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20200616 VA Readability Certification.pdf Election Form 20200429 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20200429 VA Readability Certification.pdf Election Form 20200429 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20200323 VA Readability Certification.pdf Election Form 20200323 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20190827 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20190424 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20181026 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20180824 VA Readability Certification.pdf</i>



<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

<b>Satisfied - Item:</b>	Statement of Variability
<b>Comments:</b>	
<b>Attachment(s):</b>	SOV for FR2251-VA-1 (0820).pdf SOV for FR2251EF-VA.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Statement of Variability Notification Letter 20200616 VA.pdf Statement of Variability Election Form 20200429 VA.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Statement of Variability Notification Letter 20200429 VA.pdf Statement of Variability Election Form 20200429 VA.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Statement of Variability Notification Letter 20200323 VA.pdf Statement of Variability Election Form 20200323 VA.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Statement of Variability 20190827 VA.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>FR2251-VA-1 (0618).SOV.20190424.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>FR2251-VA-1 (0618).SOV.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>FR2251-VA-1 (0618).SOV.pdf</i>

<b>SERFF Tracking #:</b>	MILL-131569310	<b>State Tracking #:</b>	MILL-131569310	<b>Company Tracking #:</b>	MASSMUTUAL
<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company		
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified				
<b>Product Name:</b>	Long-Term Care				
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02				

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

Supporting Document Schedule Item Changes	
<b>Satisfied - Item:</b>	Certification of Compliance
<b>Comments:</b>	
<b>Attachment(s):</b>	VA Certificate of Compliance 20200812.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200616.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200429.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200323.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20190827 signed.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20181026 signed.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance.pdf</i>

<b>Satisfied - Item:</b>	L&H Readability - Health
<b>Comments:</b>	

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

<b>Attachment(s):</b>	Notification Letter 20200812 VA Readability Certification.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20200616 VA Readability Certification.pdf Election Form 20200429 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20200429 VA Readability Certification.pdf Election Form 20200429 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20200323 VA Readability Certification.pdf Election Form 20200323 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20190827 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20190424 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20181026 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20180824 VA Readability Certification.pdf</i>

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

<b>Satisfied - Item:</b>	Statement of Variability
<b>Comments:</b>	
<b>Attachment(s):</b>	SOV for FR2251-VA-1 (0820).pdf SOV for FR2251EF-VA.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Statement of Variability Notification Letter 20200616 VA.pdf Statement of Variability Election Form 20200429 VA.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Statement of Variability Notification Letter 20200429 VA.pdf Statement of Variability Election Form 20200429 VA.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Statement of Variability Notification Letter 20200323 VA.pdf Statement of Variability Election Form 20200323 VA.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Statement of Variability 20190827 VA.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>FR2251-VA-1 (0618).SOV.20190424.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>FR2251-VA-1 (0618).SOV.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>FR2251-VA-1 (0618).SOV.pdf</i>

<b>SERFF Tracking #:</b>	MILL-131569310	<b>State Tracking #:</b>	MILL-131569310	<b>Company Tracking #:</b>	MASSMUTUAL
<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company		
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified				
<b>Product Name:</b>	Long-Term Care				
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02				

<b>Satisfied - Item:</b>	John Doe Sample Policyowner Notification Letter
<b>Comments:</b>	
<b>Attachment(s):</b>	FR2251-VA-1 (John Doe Sample).pdf FR2251EF-VA (John Doe Sample).pdf

State: Virginia Filing Company: Massachusetts Mutual Life Insurance Company  
 TOI/Sub-TOI: LTC03I Individual Long Term Care/LTC03I.001 Qualified  
 Product Name: Long-Term Care  
 Project Name/Number: MassMutual LTC Rate Increase Filing/145MML01-10.02

Form Schedule Item Changes								
Item No.	Form Name	Form Number	Form Type	Form Action	Action Specific Data	Readability Score	Attachments	Submitted
1	Personalized Options Election Form	FR2251EF-VA (0820)	OTH	Initial		42.100	FR2251EF-VA.pdf	Date Submitted: 08/13/2020 By: Shawn Stender
Previous Version								
1	Personalized Options Election Form	FR2251EF-VA (0420)	OTH	Initial		42.100	Election Form 20200429 VA.pdf	Date Submitted: 04/30/2020 By: Shawn Stender
Previous Version								
1	Personalized Options Election Form	FR2251EF-VA (0320)	OTH	Initial		42.100	Election Form 20200323 VA.pdf	Date Submitted: 03/27/2020 By: Shawn Stender
2	Notice of Premium Increase	FR2251-VA-1 (0820)	OTH	Initial		40.300	FR2251-VA-1 (0820).pdf	Date Submitted: 08/13/2020 By: Shawn Stender
Previous Version								
2	Notice of Premium Increase	FR2251-VA-1 (0420)	OTH	Initial		40.000	Notification Letter 20200616 VA with form number.pdf	Date Submitted: 06/17/2020 By:
Previous Version								
2	Notice of Premium Increase	FR2251-VA-1 (0420)	OTH	Initial		40.300	Notification Letter 20200429 VA with form number.pdf	Date Submitted: 04/30/2020 By: Shawn Stender
Previous Version								
2	Notice of Premium Increase	FR2251-VA-1 (0320)	OTH	Initial		40.300	Notification Letter 20200323 VA with form number.pdf	Date Submitted: 03/27/2020 By: Shawn Stender
Previous Version								
2	Notice of Premium Increase	FR2251-VA-1 (0819)	OTH	Initial		40.400	Notification Letter 20190827 VA with form number.pdf	Date Submitted: 09/05/2019 By:

State: Virginia Filing Company: Massachusetts Mutual Life Insurance Company  
 TOI/Sub-TOI: LTC03I Individual Long Term Care/LTC03I.001 Qualified  
 Product Name: Long-Term Care  
 Project Name/Number: MassMutual LTC Rate Increase Filing/145MML01-10.02

Form Schedule Item Changes								
Item No.	Form Name	Form Number	Form Type	Form Action	Action Specific Data	Readability Score	Attachments	Submitted
1	Personalized Options Election Form	FR2251EF-VA (0820)	OTH	Initial		42.100	FR2251EF-VA.pdf	Date Submitted: 08/13/2020 By: Shawn Stender
Previous Version								
2	Notice of Premium Increase	FR2251-VA-1 (0618)	OTH	Initial		40.600	Notification Letter 20190424 VA with form number.pdf	Date Submitted: 04/29/2019 By: Andrea Steffan
Previous Version								
2	Notice of Premium Increase	FR2251-VA-1 (0618)	OTH	Initial		40.600	Notification Letter 20181023 VA with form number.pdf	Date Submitted: 11/02/2018 By:
Previous Version								
2	Notice of Premium Increase	FR2251-VA-1 (0618)	OTH	Initial		40.500	Notification Letter 20180822 VA with form number.pdf	Date Submitted: 08/30/2018 By: Shawn Stender

No Rate/Rule Schedule items changed.

## Response 2

### Comments:

This language is included in the election form. It has been added to the notification letter. It has been bolded in both documents as requested.

## Related Objection 2

Applies To:

- Notice of Premium Increase, FR2251-VA-1 (0420) (Form)

Comments: 14VAC-200-75 D 2(b) requires that a disclosure that all options available to the policyholder may not be of equal value. This disclosure needs to be included in a section of the letter that is NOT variable and should be emphasized by either bolding, highlighting, etc.

## Changed Items:

No Supporting Documents changed.



State:	Virginia	Filing Company:	Massachusetts Mutual Life Insurance Company
TOI/Sub-TOI:	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
Product Name:	Long-Term Care		
Project Name/Number:	MassMutual LTC Rate Increase Filing/145MML01-10.02		

No Form Schedule items changed.

No Rate/Rule Schedule items changed.

### Response 3

#### Comments:

The company has bolded this section as requested.

### Related Objection 3

Applies To:

- Notice of Premium Increase, FR2251-VA-1 (0420) (Form)

Comments: On page 3 of the letter, the section referring to partnership policies is considered a disclosure, and as such, should be emphasized by either bold print, highlighting, etc.

#### Changed Items:

No Supporting Documents changed.

No Form Schedule items changed.

No Rate/Rule Schedule items changed.

### Response 4

#### Comments:

Thank you for your recommendation. The address and phone number have been changed to variable text on both the notification letter and the election form. The corresponding Statement of Variability for each have been updated accordingly.

### Related Objection 4

Applies To:

- Notice of Premium Increase, FR2251-VA-1 (0420) (Form)

Comments: On page 6, the company may consider adding brackets to the company's address and phone number in case a change is needed.

#### Changed Items:

No Supporting Documents changed.

No Form Schedule items changed.

No Rate/Rule Schedule items changed.

<b>SERFF Tracking #:</b>	MILL-131569310	<b>State Tracking #:</b>	MILL-131569310	<b>Company Tracking #:</b>	MASSMUTUAL
<hr/>					
<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company		
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified				
<b>Product Name:</b>	Long-Term Care				
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02				

## Response 5

### Comments:

The company confirms that this website is correct as it currently appears in the notification letter. No updates are necessary. If the web address changes in the future, the companys understanding is that they can update the notification letter accordingly without submitting a new version for approval.

## Related Objection 5

Applies To:

- Notice of Premium Increase, FR2251-VA-1 (0420) (Form)

Comments: The web address for the Virginia Bureau of Insurance has changed. The revised address is <https://scc.virginia.gov/boi/SERFFInquiry/LtcFilings.aspx>.

## Changed Items:

No Supporting Documents changed.

No Form Schedule items changed.

No Rate/Rule Schedule items changed.

## Response 6

### Comments:

The company confirms that the company will comply with this requirement to provide the notification letter at least 75 days prior to the rate increase effective date. As stated in the actuarial memorandum, the company intends to send notification letters at least 90 days prior to the rate increase effective date. The company submits that this complies with 14VAC5-200-75.

## Related Objection 6

Applies To:

- Notice of Premium Increase, FR2251-VA-1 (0420) (Form)

Comments: 14VAC5-200-75 requires that an insurer provides notice of an upcoming premium rate schedule increase to all policyholders at least 75 days prior to the implementation of the premium rate schedule increase. Please confirm that the company will comply with this requirement so that the policyholders will have a minimum of 75 days to make any decisions once they receive the letter.

## Changed Items:

No Supporting Documents changed.

No Form Schedule items changed.

No Rate/Rule Schedule items changed.

<b>SERFF Tracking #:</b>	MILL-131569310	<b>State Tracking #:</b>	MILL-131569310	<b>Company Tracking #:</b>	MASSMUTUAL
<hr/>					
<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company		
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified				
<b>Product Name:</b>	Long-Term Care				
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02				

## Response 7

### Comments:

The company name and address have been bolded as requested.

## Related Objection 7

Applies To:

- Notice of Premium Increase, FR2251-VA-1 (0420) (Form)

Comments: Virginia Regulation 14VAC5-101-60-2 requires that the full licensed name of the company, including the address, appear prominently at the top of any form.

Examples of prominent print include all capital letters, bold print, enlarged font, or otherwise differentiated from the other print in the form.

### Changed Items:

No Supporting Documents changed.

No Form Schedule items changed.

No Rate/Rule Schedule items changed.

## Response 8

### Comments:

A copy of the final form in John Doe fashion is enclosed.

## Related Objection 8

Applies To:

- Notice of Premium Increase, FR2251-VA-1 (0420) (Form)

Comments: In compliance with 14VAC5-101-60 5, please submit a copy of each form in the final form in which it is to be marketed or issued, completed in a "John Doe" fashion to indicate how it is intended to be used.

### Changed Items:

No Supporting Documents changed.

No Form Schedule items changed.

No Rate/Rule Schedule items changed.

## Response 9

### Comments:

<b>SERFF Tracking #:</b>	MILL-131569310	<b>State Tracking #:</b>	MILL-131569310	<b>Company Tracking #:</b>	MASSMUTUAL
<hr/>					
<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company		
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified				
<b>Product Name:</b>	Long-Term Care				
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02				

*This paragraph is intended to explain how the rate increase will impact billing statement administration for policies that utilize direct billing. Billing statements are mailed approximately 45 days prior to the policy anniversary. This section describes what will be printed on the billing statement if the company does not hear from the policyowner a few days prior to when billing statements are mailed. The company is not requesting nor requiring that the policyowner inform them of their coverage change request 50 days prior to the policy anniversary date.*

*In addition, the company states that as long as we receive the request by the Policy Anniversary Date of [MM/DD/CCYY], we will process your request as of the Policy Anniversary Date*

*Therefore the company respectfully maintains that the 50 days are included in the required 75 day notification period and therefore the companys current administration practices comply with 14VAC5-200-75.*

#### **Related Objection 9**

*Applies To:*

- Notice of Premium Increase, FR2251-VA-1 (0420) (Form)*

*Comments: We have some concerns about the section of the letter on page 4, that starts with "IMPORTANT NOTE ABOUT BILLING". If the company is requesting that a policyholder respond 50 days prior to the Policy Anniversary Date, we feel that will be out of compliance with 14VAC5-200-75 which requires that an insurer give their policyholders at least 75 days notice of an impending premium increase.*

#### **Changed Items:**

*No Supporting Documents changed.*

*No Form Schedule items changed.*

*No Rate/Rule Schedule items changed.*

#### **Response 10**

**Comments:**

*Thank you for your recommendation. The company has updated the notification letter and statement of variability accordingly.*

#### **Related Objection 10**

*Applies To:*

- Notice of Premium Increase, FR2251-VA-1 (0420) (Form)*

<b>SERFF Tracking #:</b>	MILL-131569310	<b>State Tracking #:</b>	MILL-131569310	<b>Company Tracking #:</b>	MASSMUTUAL
<hr/>					
<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company		
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified				
<b>Product Name:</b>	Long-Term Care				
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02				

*Comments: The company may consider using this letter as a template for future letters, to simplify the review process in case of future rate increases. If so, we would recommend putting brackets around the reasons for the increase on page 1 of the letter.*

*The SOV would need to be revised to show the variability, using language similar to this:*

*" [After a careful and thorough assessment,t] This section is bracketed to allow for different reasons to be used for future rate increases. The company will revise and resubmit the SOV should different language be required."*

**Changed Items:**

*No Supporting Documents changed.*

*No Form Schedule items changed.*

*No Rate/Rule Schedule items changed.*

**Response 11**

**Comments:**

*The company name and address have been bolded as requested.*

**Related Objection 11**

*Applies To:*

*- Personalized Options Election Form, FR2251EF-VA (0420) (Form)*

*Comments: Virginia Regulation 14VAC5-101-60-2 requires that the full licensed name of the company, including the address, appear prominently at the top of any form. Examples of prominent print include all capital letters, bold print, enlarged font, or otherwise differentiated from the other print in the form.*

**Changed Items:**

*No Supporting Documents changed.*

*No Form Schedule items changed.*

*No Rate/Rule Schedule items changed.*

**Response 12**

**Comments:**

*As stated in the actuarial memorandum, the company intends to send notification letters at least 90 days prior to the rate increase effective date. The company submits that this complies with 14VAC5-200-75.*

**Related Objection 12**

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

*Applies To:*

*- Personalized Options Election Form, FR2251EF-VA (0420) (Form)*

*Comments: 14VAC5-200-75 requires that an insurer provides notice of an upcoming premium rate schedule increase to all policyholders at least 75 days prior to the implementation of the premium rate schedule increase. Please confirm that the company will comply with this requirement so that the policyholders will have a minimum of 75 days to make any decisions once they receive the letter.*

**Changed Items:**

*No Supporting Documents changed.*

*No Form Schedule items changed.*

*No Rate/Rule Schedule items changed.*

**Response 13**

**Comments:**

*There can be 2 types of CBUL endorsements attached to a policy.*

*The first CBUL option is the standard CBUL endorsement as described in 14VAC5-200-185 E 3. The description of this CBUL option is on page 6 of the notification letter. This CBUL option complies with 14VAC5-200-185 E 3.*

*The second CBUL option references a limited pay CBUL endorsement in accordance with 14VAC5-200-185 D 4. As you are aware, 14VAC5-200-185 E 3 does not apply to 14VAC5-200-185 D 4. If a limited pay CBUL endorsement is attached to the policy and if a substantial rate increase triggers this benefit as described in the endorsement, then this CBUL option will be included as option #2 as described in the endorsement.*

**Related Objection 13**

*Applies To:*

*- Personalized Options Election Form, FR2251EF-VA (0420) (Form)*

*Comments: The section of the Option Selection Form referring to the Non-Forfeiture rider and the CBUL option refers to an option 1 and option 2. 14VAC5-200-185 E 3 state that the standard CBUL option is 100% of the sum of all premiums paid, including the premiums paid prior to any changes in benefits but not less than 30 times the daily nursing home benefit at the time of lapse. Please provide a description of both options.*

**Changed Items:**

*No Supporting Documents changed.*

*No Form Schedule items changed.*

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

No Rate/Rule Schedule items changed.

#### Response 14

##### Comments:

The bulleted points following Understanding your options contain options that may be available that will reduce the policy's premium. The CBUL option, if available, would convert the policy to a paid-up status instead of reducing the premium. The CBUL option or non-forfeiture rider, whichever applies to the specific policy, is addressed on page 4, item 3 under What you need to do.

#### Related Objection 14

Applies To:

- Notice of Premium Increase, FR2251-VA-1 (0420) (Form)

Comments: In the section of the letter titled "Understanding Your Options", please include the option of triggering the Contingent Benefit Upon Lapse (CBUL) or the Non-Forfeiture Option, and provide a description of those options.

#### Changed Items:

No Supporting Documents changed.

No Form Schedule items changed.

No Rate/Rule Schedule items changed.

#### Response 15

##### Comments:

All policies that are receiving a rate increase, including those on Waiver of Premium, will receive a notification letter and will have a rate increase become effective on the Policy Anniversary Date. The company will allow a policyowner who is on Waiver of Premium to make a decision regarding a change in benefits when the policy is no longer subject to the Waiver of Premium.

#### Related Objection 15

Applies To:

- Notice of Premium Increase, FR2251-VA-1 (0420) (Form)

Comments: In the section of the letter explaining Waiver of Premium, when is a policyholder on waiver of premium required to make any decisions about changing his benefits in the event of a rate increase?

#### Changed Items:

No Supporting Documents changed.

State:	Virginia	Filing Company:	Massachusetts Mutual Life Insurance Company
TOI/Sub-TOI:	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
Product Name:	Long-Term Care		
Project Name/Number:	MassMutual LTC Rate Increase Filing/145MML01-10.02		

No Form Schedule items changed.

No Rate/Rule Schedule items changed.

## Response 16

### Comments:

The notification letter filed with the original August 15, 2018 filing contained both the notification letter and election form as one document. The joint policyowner name did appear on page 8 of that document, which was part of the election form. The objection letter dated February 28, 2020 requested that the document be split into two parts, the notification letter and the election form. At this time, the reference to the joint policyowner name on page 8 was moved to the Statement of Variability for the Election form. However, the removal of this reference on the Statement of Variability for the notification letter was inadvertently missed.

The Statement of Variability for the notification letter has been updated to remove the reference to page 8.

## Related Objection 16

Applies To:

- Statement of Variability (Supporting Document)

Comments: On page 1 of the SOV for the Policyowner Letter, please explain the note under Joint Policyowner Name that states: "On page 8, the joint policyowner name..." Please explain that note as we could not find a page 8.

## Changed Items:

No Supporting Documents changed.

No Form Schedule items changed.

No Rate/Rule Schedule items changed.

## Response 17

### Comments:

The options listed in the letter are the generic options that may be available to policies receiving a rate increase. The descriptions included are factual statements. The section that starts Remove or reduce optional riders has been changed to variable text on the notification letter, and the corresponding Statement of Variability has been updated accordingly. The Personalized Options Elections Form is personalized to give specific options available to a specific policy's coverage. The company feels the Personalized Options Election Form is clear as to what can or cannot be done. The Personalized Options Elections Form was separated from the notification letter at the request of the Department, but these two forms are mailed together as a single document.

## Related Objection 17

Applies To:

- Notice of Premium Increase, FR2251-VA-1 (0420) (Form)



<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

- *Statement of Variability (Supporting Document)*

*Comments: On page 3 of the policyowner letter, the section describing benefits has the potential to be misleading. It seems if each of the benefits were made variable, then each letter would contain descriptions of only those options available to each policyowner.*

*This also applies to the section labeled "Remove or reduce optional riders". If that section were made variable, a policyowner who has no optional riders would not have that section in his/her letter.*

*Please revise the SOV to show these changes in variability.*

**Changed Items:**

*No Supporting Documents changed.*

*No Form Schedule items changed.*

*No Rate/Rule Schedule items changed.*

**Response 18**

**Comments:**

*As requested, the statement noted has been moved to the paragraph notifying the insured of the premium increase on page 1 of the notification letter.*

**Related Objection 18**

*Applies To:*

*- Notice of Premium Increase, FR2251-VA-1 (0420) (Form)*

*Comments: On page 2, paragraph 2; for clarity, this required statement should be included within the paragraph notifying the insured of the premium increase.*

**Changed Items:**

*No Supporting Documents changed.*

*No Form Schedule items changed.*

*No Rate/Rule Schedule items changed.*

**Response 19**

**Comments:**

*The company confirms that the date of the letter is the mail date. The notification letters will be sent at least 90 days prior to the rate increase effective date, which satisfies the 75 days notice required in 14VAC5-200-75 D.*

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

### **Related Objection 19**

*Applies To:*

- Notice of Premium Increase, FR2251-VA-1 (0420) (Form)
- Statement of Variability (Supporting Document)

*Comments: Please specify if the date of the letter, shown on page 1, is the print date or the mail date. Verify that the 75 days notice required in 14VAC5-200-75 D is not included in this date.*

### **Changed Items:**

*No Supporting Documents changed.*

*No Form Schedule items changed.*

*No Rate/Rule Schedule items changed.*

### **Response 20**

#### **Comments:**

*The SOV has been updated as requested.*

### **Related Objection 20**

*Applies To:*

- Notice of Premium Increase, FR2251-VA-1 (0420) (Form)
- Statement of Variability (Supporting Document)

*Comments: The policyholder letter SOV states that The Policy Anniversary Date is bracketed on page 3. We could not find that on page 3. Please correct the SOV.*

### **Changed Items:**

*No Supporting Documents changed.*

*No Form Schedule items changed.*

*No Rate/Rule Schedule items changed.*

### **Response 21**

#### **Comments:**

*All policies that are receiving a rate increase, including those on Waiver of Premium, will receive a notification letter and will have a rate increase become effective on the Policy Anniversary Date. The company will allow a policyowner who is on Waiver of Premium to make a decision regarding a change in benefits when the policy is no longer subject to the Waiver of Premium.*

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

### **Related Objection 21**

*Applies To:*

- Notice of Premium Increase, FR2251-VA-1 (0420) (Form)

*Comments: Please explain how you administer the offering of reduced policy benefit options to an insured who is on waiver of premium. Are insureds on waiver required to make decisions about their policy options while in a period of reduced capacity?*

### **Changed Items:**

*No Supporting Documents changed.*

*No Form Schedule items changed.*

*No Rate/Rule Schedule items changed.*

### **Response 22**

#### **Comments:**

*While the company believes this statement is not required by regulation, it is intended to draw attention to the coverage requirements in the covered partner riders such as Paid-Up Survivor Benefit Rider, Waiver of Premium for Covered Partner Rider, and Shared Care Rider.*

### **Related Objection 22**

*Applies To:*

- Notice of Premium Increase, FR2251-VA-1 (0420) (Form)

*Comments: Please clarify the sentence on page 3 referring to covered partner benefits.*

### **Changed Items:**

*No Supporting Documents changed.*

*No Form Schedule items changed.*

*No Rate/Rule Schedule items changed.*

### **Response 23**

#### **Comments:**

*Thank you for the follow-up conversation between the Bureau and Milliman on 7/27/2020, where the Bureau clarified that they want the company to move the indicated paragraph up to be the first paragraph of the Understanding your options section. The company has moved this paragraph as requested.*

### **Related Objection 23**

*Applies To:*

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

- Notice of Premium Increase, FR2251-VA-1 (0420) (Form)

Comments: The 5th paragraph on page 3, that starts with A Personalized Options Selection Form seems out of place in its present location. We feel it may be better suited closer to the description of the options available.

**Changed Items:**

No Supporting Documents changed.

No Form Schedule items changed.

No Rate/Rule Schedule items changed.

**Response 24**

**Comments:**

The company has updated the notification letter for clarity as follows:

[Note: If we do not hear from you and you do not pay the new premium, your policy will be subject to lapse due to non-payment of premium. If the policy lapses due to non-payment of premium within the 120-day period as described in the Contingent Benefit Upon Lapse option, then the policy will be converted to a paid-up policy under the Contingent Benefit Upon Lapse option.]

**Related Objection 24**

Applies To:

- Notice of Premium Increase, FR2251-VA-1 (0420) (Form)

Comments: On page 4, the second Note at the end of the section called What you need to do could be misleading. According to the Actuarial Memorandum, the CBUL will be offered to all insureds affected by this increase. The section that states your policy will lapse due to non-payment of premium implies that an insured will lose their policy, when it will actually become paid-up under the CBUL. Please revise the paragraph to remove that section.

**Changed Items:**

No Supporting Documents changed.

No Form Schedule items changed.

No Rate/Rule Schedule items changed.

**Response 25**

**Comments:**

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

The notification letters will be sent at least 90 days prior to the rate increase effective date, which satisfies the 75 days notice required in 14VAC5-200-75 D. The company does not expect to hear from the policyowner at least 50 days prior to the rate increase effective date but does acknowledge that it is possible. Because the company does not expect to hear from policyowners at least 50 days prior to the rate increase effective date, this paragraph explains what happens with the billing statement and further clarifies that the company will process requests received prior to the policy anniversary date.

#### **Related Objection 25**

Applies To:

- Notice of Premium Increase, FR2251-VA-1 (0420) (Form)

Comments: In the section titled Important Note About Billing, if the company expects to hear from the insured at least 50 days prior to the policy anniversary date, how can the insured be given a minimum of 75 days notice in which to make any decisions as required in 14VAC5-200-75 D.

#### **Changed Items:**

No Supporting Documents changed.

No Form Schedule items changed.

No Rate/Rule Schedule items changed.

#### **Response 26**

##### **Comments:**

Policyowners have the ability pay the increased premium and then decide to reduce coverage, both before the policy anniversary date. For example, if the policyowner chose a PAC withdrawal date prior to the premium due date, the premium could be drafted before the company receives the clients notice of their decision to reduce coverage. Another example is when a payment is made via a third-party account and the policyowner forgets to revise the payment amount with that third party. Therefore, it is possible that the policyowner could overpay for the reduced coverage. In these types of cases, it is appropriate to refund excess premium, if any.

#### **Related Objection 26**

Applies To:

- Notice of Premium Increase, FR2251-VA-1 (0420) (Form)

Comments: Please explain why, if an insured sends their request to change coverage by the anniversary date, the company would draft the increased premium, and then have to refund any overpayment.

#### **Changed Items:**

No Supporting Documents changed.

No Form Schedule items changed.

No Rate/Rule Schedule items changed.

<b>SERFF Tracking #:</b>	MILL-131569310	<b>State Tracking #:</b>	MILL-131569310	<b>Company Tracking #:</b>	MASSMUTUAL
<hr/>					
<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company		
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified				
<b>Product Name:</b>	Long-Term Care				
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02				

## Response 27

### Comments:

*This sentence is intended to clarify that the 120-day period as referenced in 14VAC5-200-185 D 5 and 14VAC5-200-185 D 6 does not begin until the rate increase becomes effective. If they do not pay to their policy anniversary date, then the policy would lapse prior to policy anniversary date and the rate increase will not become effective on the policy. Therefore, a CBUL benefit would not apply.*

*As this sentence is a clarification of existing regulation and administrative practices, the company believes it is appropriate to continue to include this sentence.*

## Related Objection 27

*Applies To:*

*- Notice of Premium Increase, FR2251-VA-1 (0420) (Form)*

*Comments: The section of the letter titled "Important Information about the Contingent Benefit Upon Lapse Option" states "Your policy must be paid to the Policy Anniversary Date in order for this benefit to be available."*

*Virginia Regulation 14VAC5-200-185 D 3, has no stipulation that a policy must be paid to the anniversary date to qualify for the CBUL. Please remove that sentence.*

## Changed Items:

*No Supporting Documents changed.*

*No Form Schedule items changed.*

*No Rate/Rule Schedule items changed.*

## Conclusion:

*Thank you for working with us to complete this filing. Please let us know if you have any additional questions.*

*Sincerely,*

*Shawn Stender*

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

## Response Letter

Response Letter Status	Submitted to State
Response Letter Date	04/30/2020
Submitted Date	04/30/2020

Dear Bobby Toone,

### **Introduction:**

Thank you for reviewing this filing.

### **Response 1**

#### **Comments:**

Revised versions of the policyowner notification letter and personalized options election form have been attached on the Form Schedule tab of SERFF. We have also attached updated statements of variability and readability certifications.

Please note that the attached documents were prepared by MassMutual. Milliman did not audit the attached documents, but did review them for reasonableness.

### **Related Objection 1**

Applies To:

- Notice of Premium Increase, FR2251-VA-1 (0320) (Form)
- Personalized Options Election Form, FR2251EF-VA (0320) (Form)

Comments: Per our phone conversation on 05/27/2020, please increase to font size 10 the corporate address and phone numbers at the bottom of page 1 in each of the above mentioned forms.

### **Changed Items:**

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

Supporting Document Schedule Item Changes	
<b>Satisfied - Item:</b>	Certification of Compliance
<b>Comments:</b>	
<b>Attachment(s):</b>	VA Certificate of Compliance 20200429.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200323.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20190827 signed.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20181026 signed.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance.pdf</i>



<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

Supporting Document Schedule Item Changes	
<b>Satisfied - Item:</b>	Certification of Compliance
<b>Comments:</b>	
<b>Attachment(s):</b>	VA Certificate of Compliance 20200429.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200323.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20190827 signed.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20181026 signed.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance.pdf</i>

<b>Satisfied - Item:</b>	L&H Readability - Health
<b>Comments:</b>	
<b>Attachment(s):</b>	Notification Letter 20200429 VA Readability Certification.pdf Election Form 20200429 VA Readability Certification.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20200323 VA Readability Certification.pdf Election Form 20200323 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	

<b>SERFF Tracking #:</b>	MILL-131569310	<b>State Tracking #:</b>	MILL-131569310	<b>Company Tracking #:</b>	MASSMUTUAL
<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company		
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified				
<b>Product Name:</b>	Long-Term Care				
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02				
<b>Attachment(s):</b>	Notification Letter 20190827 VA Readability Certification.pdf				
Previous Version					
<b>Satisfied - Item:</b>	L&H Readability - Health				
<b>Comments:</b>					
<b>Attachment(s):</b>	Notification Letter 20190424 VA Readability Certification.pdf				
Previous Version					
<b>Satisfied - Item:</b>	L&H Readability - Health				
<b>Comments:</b>					
<b>Attachment(s):</b>	Notification Letter 20181026 VA Readability Certification.pdf				
Previous Version					
<b>Satisfied - Item:</b>	L&H Readability - Health				
<b>Comments:</b>					
<b>Attachment(s):</b>	Notification Letter 20180824 VA Readability Certification.pdf				

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

Supporting Document Schedule Item Changes	
<b>Satisfied - Item:</b>	Certification of Compliance
<b>Comments:</b>	
<b>Attachment(s):</b>	VA Certificate of Compliance 20200429.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200323.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20190827 signed.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20181026 signed.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance.pdf</i>

<b>Satisfied - Item:</b>	L&H Readability - Health
<b>Comments:</b>	
<b>Attachment(s):</b>	Notification Letter 20200429 VA Readability Certification.pdf Election Form 20200429 VA Readability Certification.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20200323 VA Readability Certification.pdf Election Form 20200323 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

<b>Attachment(s):</b>	<i>Notification Letter 20190827 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20190424 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20181026 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20180824 VA Readability Certification.pdf</i>

<b>Satisfied - Item:</b>	Statement of Variability
<b>Comments:</b>	
<b>Attachment(s):</b>	Statement of Variability Notification Letter 20200429 VA.pdf Statement of Variability Election Form 20200429 VA.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Statement of Variability Notification Letter 20200323 VA.pdf</i> <i>Statement of Variability Election Form 20200323 VA.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Statement of Variability 20190827 VA.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>FR2251-VA-1 (0618).SOV.20190424.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>

<b>SERFF Tracking #:</b>	MILL-131569310	<b>State Tracking #:</b>	MILL-131569310	<b>Company Tracking #:</b>	MASSMUTUAL
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<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

<b>Comments:</b>	
<b>Attachment(s):</b>	FR2251-VA-1 (0618).SOV.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	Statement of Variability
<b>Comments:</b>	
<b>Attachment(s):</b>	FR2251-VA-1 (0618).SOV.pdf

State: Virginia Filing Company: Massachusetts Mutual Life Insurance Company  
 TOI/Sub-TOI: LTC03I Individual Long Term Care/LTC03I.001 Qualified  
 Product Name: Long-Term Care  
 Project Name/Number: MassMutual LTC Rate Increase Filing/145MML01-10.02

Form Schedule Item Changes								
Item No.	Form Name	Form Number	Form Type	Form Action	Action Specific Data	Readability Score	Attachments	Submitted
1	Notice of Premium Increase	FR2251-VA-1 (0420)	OTH	Initial		40.300	Notification Letter 20200429 VA with form number.pdf	Date Submitted: 04/30/2020 By: Shawn Stender
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0320)	OTH	Initial		40.300	Notification Letter 20200323 VA with form number.pdf	Date Submitted: 03/27/2020 By: Shawn Stender
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0819)	OTH	Initial		40.400	Notification Letter 20190827 VA with form number.pdf	Date Submitted: 09/05/2019 By:
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0618)	OTH	Initial		40.600	Notification Letter 20190424 VA with form number.pdf	Date Submitted: 04/29/2019 By: Andrea Steffan
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0618)	OTH	Initial		40.600	Notification Letter 20181023 VA with form number.pdf	Date Submitted: 11/02/2018 By:
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0618)	OTH	Initial		40.500	Notification Letter 20180822 VA with form number.pdf	Date Submitted: 08/30/2018 By: Shawn Stender
2	Personalized Options Election Form	FR2251EF-VA (0420)	OTH	Initial		42.100	Election Form 20200429 VA.pdf	Date Submitted: 04/30/2020 By: Shawn Stender
Previous Version								
2	Personalized Options Election Form	FR2251EF-VA (0320)	OTH	Initial		42.100	Election Form 20200323 VA.pdf	Date Submitted: 03/27/2020 By: Shawn Stender

<b>SERFF Tracking #:</b>	MILL-131569310	<b>State Tracking #:</b>	MILL-131569310	<b>Company Tracking #:</b>	MASSMUTUAL
<hr/>					
<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company		
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified				
<b>Product Name:</b>	Long-Term Care				
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02				

*No Rate/Rule Schedule items changed.*

**Conclusion:**

*Thank you for working with us to complete this filing. Please let us know if you have any additional questions.*

*Sincerely,*

*Shawn Stender*

<b>SERFF Tracking #:</b>	MILL-131569310	<b>State Tracking #:</b>	MILL-131569310	<b>Company Tracking #:</b>	MASSMUTUAL
<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company		
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified				
<b>Product Name:</b>	Long-Term Care				
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02				

## Response Letter

Response Letter Status	Submitted to State
Response Letter Date	05/26/2020
Submitted Date	05/27/2020

Dear Bobby Toone,

### Introduction:

On behalf of Missy Gordon, thank you for reviewing this filing.

### Response 1

#### Comments:

Please see the attached documents in response to your April 27 requests.

### Related Objection 1

Applies To:

- L&H Actuarial Memorandum (Supporting Document)

Comments: Please provide all projections necessary to evaluate the requests based on both the Prospective Present Value Approach (or Texas Method) and the "If-Knew/Makeup Blend" approach (or Minnesota Method).

### Changed Items:

Supporting Document Schedule Item Changes	
<b>Satisfied - Item:</b>	Response to April 27, 2020 Requests
<b>Comments:</b>	
<b>Attachment(s):</b>	VA_Response to 20200427 Objection_20200527.pdf VA_Response to 20200427 Objection Attachments_MML_20200527.xlsb

No Form Schedule items changed.

No Rate/Rule Schedule items changed.

### Response 2

#### Comments:

See above.

### Related Objection 2



<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

*Applies To:*

*- L&H Actuarial Memorandum (Supporting Document)*

*Comments: Please explain why, with all the concerns and press about Long-Term Care insurance rates, the company has filed any previous rate increase requests.*

**Changed Items:**

*No Supporting Documents changed.*

*No Form Schedule items changed.*

*No Rate/Rule Schedule items changed.*

**Conclusion:**

*Thank you for working with us to complete this filing. Please let us know if you have any additional questions.*

*Sincerely,*

*Shawn Stender*

<b>SERFF Tracking #:</b>	MILL-131569310	<b>State Tracking #:</b>	MILL-131569310	<b>Company Tracking #:</b>	MASSMUTUAL
<hr/>					
<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company		
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified				
<b>Product Name:</b>	Long-Term Care				
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02				

## Response Letter

Response Letter Status	Submitted to State
Response Letter Date	03/25/2020
Submitted Date	03/27/2020

Dear Bobby Toone,

### **Introduction:**

Thank you for reviewing this filing.

### **Response 1**

#### **Comments:**

The forms attached to this response have been unlocked, as requested.

### **Related Objection 1**

Applies To:

- Notice of Premium Increase, FR2251-VA-1 (0819) (Form)

Comments: So that we may continue our review of the Policyholder Letter, please unlock the document.

### **Changed Items:**

No Supporting Documents changed.

No Form Schedule items changed.

No Rate/Rule Schedule items changed.

### **Response 2**

#### **Comments:**

Separate documents for the policyowner letter and personalized options election form have been attached on the Form Schedule tab of SERFF, as requested. We have also attached updated statements of variability and readability certifications.

Please note that the attached documents were prepared by MassMutual. Milliman did not audit the attached documents, but did review them for reasonableness.

### **Related Objection 2**

Applies To:

- Notice of Premium Increase, FR2251-VA-1 (0819) (Form)

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

Comments: 14VAC5-101-60 1 requires that each form used by a company have it's own distinctive form number. As the Personalized Options Election Form seems to be designed to be separated from the Policyholder Letter and returned to the company, please assign it a new form number and include it on a separate line on the Forms Schedule.

**Changed Items:**

Supporting Document Schedule Item Changes	
<b>Satisfied - Item:</b>	Certification of Compliance
<b>Comments:</b>	
<b>Attachment(s):</b>	VA Certificate of Compliance 20200323.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20190827 signed.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20181026 signed.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance.pdf</i>

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

Supporting Document Schedule Item Changes	
<b>Satisfied - Item:</b>	Certification of Compliance
<b>Comments:</b>	
<b>Attachment(s):</b>	VA Certificate of Compliance 20200323.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20190827 signed.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20181026 signed.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance.pdf</i>

<b>Satisfied - Item:</b>	L&H Readability - Health
<b>Comments:</b>	
<b>Attachment(s):</b>	Notification Letter 20200323 VA Readability Certification.pdf Election Form 20200323 VA Readability Certification.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20190827 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20190424 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20181026 VA Readability Certification.pdf</i>

<b>SERFF Tracking #:</b>	MILL-131569310	<b>State Tracking #:</b>	MILL-131569310	<b>Company Tracking #:</b>	MASSMUTUAL
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<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20180824 VA Readability Certification.pdf</i>

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

Supporting Document Schedule Item Changes	
<b>Satisfied - Item:</b>	Certification of Compliance
<b>Comments:</b>	
<b>Attachment(s):</b>	VA Certificate of Compliance 20200323.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20190827 signed.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20181026 signed.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance.pdf</i>

<b>Satisfied - Item:</b>	L&H Readability - Health
<b>Comments:</b>	
<b>Attachment(s):</b>	Notification Letter 20200323 VA Readability Certification.pdf Election Form 20200323 VA Readability Certification.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20190827 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20190424 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20181026 VA Readability Certification.pdf</i>

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20180824 VA Readability Certification.pdf</i>

<b>Satisfied - Item:</b>	Statement of Variability
<b>Comments:</b>	
<b>Attachment(s):</b>	Statement of Variability Notification Letter 20200323 VA.pdf Statement of Variability Election Form 20200323 VA.pdf

<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Statement of Variability 20190827 VA.pdf</i>

<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>FR2251-VA-1 (0618).SOV.20190424.pdf</i>

<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>FR2251-VA-1 (0618).SOV.pdf</i>

<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>FR2251-VA-1 (0618).SOV.pdf</i>

State: Virginia Filing Company: Massachusetts Mutual Life Insurance Company  
 TOI/Sub-TOI: LTC03I Individual Long Term Care/LTC03I.001 Qualified  
 Product Name: Long-Term Care  
 Project Name/Number: MassMutual LTC Rate Increase Filing/145MML01-10.02

Form Schedule Item Changes								
Item No.	Form Name	Form Number	Form Type	Form Action	Action Specific Data	Readability Score	Attachments	Submitted
1	Notice of Premium Increase	FR2251-VA-1 (0320)	OTH	Initial		40.300	Notification Letter 20200323 VA with form number.pdf	Date Submitted: 03/27/2020 By: Shawn Stender
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0819)	OTH	Initial		40.400	Notification Letter 20190827 VA with form number.pdf	Date Submitted: 09/05/2019 By:
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0618)	OTH	Initial		40.600	Notification Letter 20190424 VA with form number.pdf	Date Submitted: 04/29/2019 By: Andrea Steffan
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0618)	OTH	Initial		40.600	Notification Letter 20181023 VA with form number.pdf	Date Submitted: 11/02/2018 By:
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0618)	OTH	Initial		40.500	Notification Letter 20180822 VA with form number.pdf	Date Submitted: 08/30/2018 By: Shawn Stender
2	Personalized Options Election Form	FR2251EF-VA (0320)	OTH	Initial		42.100	Election Form 20200323 VA.pdf	Date Submitted: 03/27/2020 By: Shawn Stender

No Rate/Rule Schedule items changed.

### Response 3

#### Comments:

The body of the policyowner notification letter and personalized options election form complies with the minimum font size of 10; this includes street addresses and phone numbers within the body of the forms. The letterhead that is used includes font size 7. It is the company's understanding that the font size requirement applies to the body of the form but does not apply to the letterhead that it will be printed on.



<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

**Related Objection 3**

*Applies To:*

*- Notice of Premium Increase, FR2251-VA-1 (0819) (Form)*

*Comments: Please verify that the font size of all forms, including street addresses and phone numbers are all a minimum of font size 10, pursuant to 14VAC5-101-70 E.*

**Changed Items:**

*No Supporting Documents changed.*

*No Form Schedule items changed.*

*No Rate/Rule Schedule items changed.*

**Conclusion:**

*Thank you for working with us to complete this filing. Please let us know if you have any additional questions.*

*Sincerely,*

*Shawn Stender*

<b>SERFF Tracking #:</b>	MILL-131569310	<b>State Tracking #:</b>	MILL-131569310	<b>Company Tracking #:</b>	MASSMUTUAL
<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company		
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified				
<b>Product Name:</b>	Long-Term Care				
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02				

## Response Letter

Response Letter Status	Submitted to State
Response Letter Date	10/22/2019
Submitted Date	11/04/2019

Dear Bobby Toone,

### Introduction:

Thank you for reviewing this filing.

### Response 1

#### Comments:

Please see the attached Excel spreadsheet in response to your October 21 request.

### Related Objection 1

Applies To:

- L&H Actuarial Memorandum (Supporting Document)

Comments: In section 2 of the Actuarial Memorandum, please provide a more detailed breakdown of the requested rate increases by providing the actual increase requested, as opposed to a range.

### Changed Items:

Supporting Document Schedule Item Changes	
<b>Satisfied - Item:</b>	Response to October 21, 2019 Request
<b>Comments:</b>	
<b>Attachment(s):</b>	VA_Response to 20191021 Request_MML_20191104.xlsb

No Form Schedule items changed.

No Rate/Rule Schedule items changed.

### Conclusion:

Thank you for working with us to complete this filing. Please let us know if you have any additional questions.

Sincerely,

Jack Bridges

<b>SERFF Tracking #:</b>	MILL-131569310	<b>State Tracking #:</b>	MILL-131569310	<b>Company Tracking #:</b>	MASSMUTUAL
<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company		
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified				
<b>Product Name:</b>	Long-Term Care				
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02				

## Response Letter

Response Letter Status	Submitted to State
Response Letter Date	04/15/2019
Submitted Date	04/29/2019

Dear Bobby Toone,

### **Introduction:**

Thank you for reviewing this filing.

### **Response 1**

#### **Comments:**

Through a SERFF post-submission update, we revised the Rate/Rule Schedule tab to reflect the correct number of policyowners. We respectfully request that the Bureau acknowledge the post-submission update prior to issuing the disposition in order for the disposition to capture this change.

### **Related Objection 1**

Applies To:

- L&H Actuarial Memorandum (Supporting Document)

Comments: Section 19 of the Actuarial Memorandum says there are 4,736 policyholders in Virginia, while the Company Rate Information section of the Rate/Rule Schedule says there 4,763. This appears to be a misprint. Please make the necessary so the correct number of policyholders will be the same.

### **Changed Items:**

No Supporting Documents changed.

No Form Schedule items changed.

No Rate/Rule Schedule items changed.

### **Response 2**

#### **Comments:**

Please see the attached documents in response to your April 10 request. Enclosed is a revised sample policyowner notification letter. Also included are the appropriate revised statement of variability and readability certification for the form. Please note that in the future slight variations in language may occur that do not materially change the information being provided to the policyowner. It is our understanding that such variations do not need to be filed with the Bureau.

### **Related Objection 2**

Applies To:

- Notice of Premium Increase, FR2251-VA-1 (0618) (Form)

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

Comments: 14VAC5-100-50 2 requires that the full and proper name of the insurer should appear on the front page of the Policyholder Notice of Premium Increase letter, in addition to the home office address, which may be limited to the city and state where the home office of the insurer is located.

**Changed Items:**

Supporting Document Schedule Item Changes	
<b>Satisfied - Item:</b>	L&H Readability - Health
<b>Comments:</b>	
<b>Attachment(s):</b>	Notification Letter 20190424 VA Readability Certification.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20181026 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20180824 VA Readability Certification.pdf</i>

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

Supporting Document Schedule Item Changes	
<b>Satisfied - Item:</b>	L&H Readability - Health
<b>Comments:</b>	
<b>Attachment(s):</b>	Notification Letter 20190424 VA Readability Certification.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20181026 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20180824 VA Readability Certification.pdf</i>

<b>Satisfied - Item:</b>	Statement of Variability
<b>Comments:</b>	
<b>Attachment(s):</b>	FR2251-VA-1 (0618).SOV.20190424.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>FR2251-VA-1 (0618).SOV.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>FR2251-VA-1 (0618).SOV.pdf</i>

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

Form Schedule Item Changes								
Item No.	Form Name	Form Number	Form Type	Form Action	Action Specific Data	Readability Score	Attachments	Submitted
1	Notice of Premium Increase	FR2251-VA-1 (0618)	OTH	Initial		40.600	Notification Letter 20190424 VA with form number.pdf	Date Submitted: 04/29/2019 By: Andrea Steffan
<i>Previous Version</i>								
1	Notice of Premium Increase	FR2251-VA-1 (0618)	OTH	Initial		40.600	Notification Letter 20181023 VA with form number.pdf	Date Submitted: 11/02/2018 By:
<i>Previous Version</i>								
1	Notice of Premium Increase	FR2251-VA-1 (0618)	OTH	Initial		40.500	Notification Letter 20180822 VA with form number.pdf	Date Submitted: 08/30/2018 By: Shawn Stender

No Rate/Rule Schedule items changed.

**Conclusion:**

Thank you for working with us to complete this filing. Please let us know if you have any additional questions.

Sincerely,

Andrea Steffan

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**State:** Virginia **Filing Company:** Massachusetts Mutual Life Insurance Company  
**TOI/Sub-TOI:** LTC03I Individual Long Term Care/LTC03I.001 Qualified  
**Product Name:** Long-Term Care  
**Project Name/Number:** MassMutual LTC Rate Increase Filing/145MML01-10.02

## Response Letter

Response Letter Status	Submitted to State
Response Letter Date	02/14/2019
Submitted Date	02/14/2019

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Dear Bobby Toone,

**Introduction:**

Thank you for reviewing this filing.

**Response 1**

**Comments:**

Please see Section 22 of the August 30, 2018 actuarial memorandum for this requested information.

**Related Objection 1**

Applies To:

- L&H Actuarial Memorandum (Supporting Document)

Comments: Please state how many policies are pre-stability (issued prior to 10/1/2003), and how many are post-stability (issued on or after 10/1/2003).

**Changed Items:**

No Supporting Documents changed.

No Form Schedule items changed.

No Rate/Rule Schedule items changed.

**Conclusion:**

Thank you for working with us to complete this filing. Please let us know if you have any additional questions.

Sincerely,

Peder Swenson

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

## Response Letter

Response Letter Status	Submitted to State
Response Letter Date	10/26/2018
Submitted Date	11/01/2018

Dear Bobby Toone,

### **Introduction:**

Thank you for reviewing this filing.

### **Response 1**

#### **Comments:**

Please see the revised Rate/Rule Schedule tab in response to your October 1 request.

### **Related Objection 1**

Applies To:

- Rate Tables, [MM-200-P-VA et al.] (Rate)
- Rate Tables , [MM-300-P-VA et al.] (Rate)
- Rate Tables , [MM-400-P-VA et al.] (Rate)
- Rate Tables , [MM500-P-VA, MM501-P-VA, et al.] (Rate)
- Rate Tables , [MM500-P-1-VA, MM501-P-1-VA, et al.] (Rate)

Comments: Please revise the Rate Action Information section of the Rate/Rule Schedule by providing the Previous State Filing Number used when each form was submitted to the BOI for approval.

### **Changed Items:**

No Supporting Documents changed.

No Form Schedule items changed.



State: Virginia Filing Company: Massachusetts Mutual Life Insurance Company  
 TOI/Sub-TOI: LTC03I Individual Long Term Care/LTC03I.001 Qualified  
 Product Name: Long-Term Care  
 Project Name/Number: MassMutual LTC Rate Increase Filing/145MML01-10.02

Rate/Rule Schedule Item Changes						
Item No.	Document Name	Affected Form Numbers (Separated with commas)	Rate Action	Rate Action Information	Attachments	Date Submitted
1	Rate Tables	MM-200-P-VA, MM-200-R1, MM-200-R2, MM-200-R3, MM-200-R4, MM-200-R5-VA, MM-200-R6-VA, MM-200-R7-VA	Revised	Previous State Filing Number: 007-0000014156, 007-0000016617 Percent Rate Change Request: 95	VA_Proposed Rate Tables_200 Series_20180830.pdf,	11/01/2018 By: Andrea Steffan
<i>Previous Version</i>						
1	Rate Tables	MM-200-P-VA et al.	Revised	Previous State Filing Number: This form and all associated riders were originally approved in 2000. Percent Rate Change Request: 95	VA_Proposed Rate Tables_200 Series_20180830.pdf,	08/30/2018 By: Shawn Stender
2	Rate Tables	MM-300-P-VA, MM-300-R1, MM-300-R2, MM-300-R3, MM-300-R4, MM-300-R5-VA, MM-300-R6-VA, MM-300-R7-VA, MM-300-R8, MM-300-R11-VA, MM-300-R12, MM-300-R13	Revised	Previous State Filing Number: 007-0000020015 Percent Rate Change Request: 97	VA_Proposed Rate Tables_300 Series_20180830.pdf,	11/01/2018 By: Andrea Steffan
<i>Previous Version</i>						
2	Rate Tables	MM-300-P-VA et al.	Revised	Previous State Filing Number: This form and all associated riders were originally approved in 2003. Percent Rate Change Request: 97	VA_Proposed Rate Tables_300 Series_20180830.pdf,	08/30/2018 By: Shawn Stender
3	Rate Tables	MM-400-P-VA, MM-	Revised	Previous State Filing	VA_Proposed Rate	11/01/2018

State: Virginia Filing Company: Massachusetts Mutual Life Insurance Company  
 TOI/Sub-TOI: LTC03I Individual Long Term Care/LTC03I.001 Qualified  
 Product Name: Long-Term Care  
 Project Name/Number: MassMutual LTC Rate Increase Filing/145MML01-10.02

Rate/Rule Schedule Item Changes						
		400-R1-VA, MM-400-R2-VA, MM-400-R3, MM-400-R4, MM-400-R5-VA, MM-400-R7, MM-400-R8, MM-400-R11-VA, MM-400-R12, MM-400-R13, MM-400-R14		Number: 007-0000023278 Percent Rate Change Request: 92	Tables_400 Series_20180830.pdf,	By: Andrea Steffan
Previous Version						
3	Rate Tables	MM-400-P-VA et al.	Revised	Previous State Filing Number: This form and all associated riders were originally approved in 2004. Percent Rate Change Request: 92	VA_Proposed Rate Tables_400 Series_20180830.pdf,	08/30/2018 By: Shawn Stender
4	Rate Tables	MM500-P-VA, MM501-P-VA, MM500R-EEP, MM500R-WOE, MM500R-MTH, MM500R-IND-1-VA, MM500R-COMP, MM500R-SIP, MM500R-ROB, MM500R-SBN-VA, MM500R-ROP, MM500R-FROP, MM500R-WOP, MM500R-SVR, MM500R-SCB, MME-10P, MME-P65	Revised	Previous State Filing Number: LFCR-125265510 Percent Rate Change Request: 72	VA_Proposed Rate Tables_500 Series_20180830.pdf,	11/01/2018 By: Andrea Steffan
Previous Version						
4	Rate Tables	MM500-P-VA, MM501-P-VA, et al.	Revised	Previous State Filing Number: This form and all associated riders were originally approved in 2008. Percent Rate Change Request: 72	VA_Proposed Rate Tables_500 Series_20180830.pdf,	08/30/2018 By: Shawn Stender
5	Rate Tables	MM500-P-1-VA,	Revised	Previous State Filing	VA_Proposed Rate	11/01/2018

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

Rate/Rule Schedule Item Changes						
		MM501-P-1-VA, MM500R-EEP-1, MM500R-WOE-1, MM500R-MTH-1, MM500R-COMP-1, MM500R-ROB-1, MM500R-SBN-1-VA, MM500R-ROP-1, MM500R-FROP-1, MM500R-WOP-1, MM500R-SVR-1, MM500R-SCB-1, MME-10P-1, MMEP65-1		Number: LFCR-127179493 Percent Rate Change Request: 33	Tables_511 Series_20180830.pdf,	By: Andrea Steffan
<i>Previous Version</i>						
5	Rate Tables	MM500-P-1-VA, MM501-P-1-VA, et al.	Revised	Previous State Filing Number: This form and all associated riders were originally approved in 2011. Percent Rate Change Request: 33	VA_Proposed Rate Tables_511 Series_20180830.pdf,	08/30/2018 By: Shawn Stender

## Response 2

### Comments:

Please see the revised Rate/Rule Schedule tab in response to your October 1 request.

## Related Objection 2

Applies To:

- Rate Tables, [MM-200-P-VA et al.] (Rate)
- Rate Tables , [MM-300-P-VA et al.] (Rate)
- Rate Tables , [MM-400-P-VA et al.] (Rate)
- Rate Tables , [MM500-P-VA, MM501-P-VA, et al.] (Rate)
- Rate Tables , [MM500-P-1-VA, MM501-P-1-VA, et al.] (Rate)

Comments: Please revise the Affected Form Numbers section of the Rate/Rule Schedule by removing "et al." and including all form numbers affected by this filing.

## Changed Items:

No Supporting Documents changed.

<b>SERFF Tracking #:</b>	MILL-131569310	<b>State Tracking #:</b>	MILL-131569310	<b>Company Tracking #:</b>	MASSMUTUAL
<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company		
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified				
<b>Product Name:</b>	Long-Term Care				
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02				

No Form Schedule items changed.

State: Virginia Filing Company: Massachusetts Mutual Life Insurance Company  
 TOI/Sub-TOI: LTC03I Individual Long Term Care/LTC03I.001 Qualified  
 Product Name: Long-Term Care  
 Project Name/Number: MassMutual LTC Rate Increase Filing/145MML01-10.02

Rate/Rule Schedule Item Changes						
Item No.	Document Name	Affected Form Numbers (Separated with commas)	Rate Action	Rate Action Information	Attachments	Date Submitted
1	Rate Tables	MM-200-P-VA, MM-200-R1, MM-200-R2, MM-200-R3, MM-200-R4, MM-200-R5-VA, MM-200-R6-VA, MM-200-R7-VA	Revised	Previous State Filing Number: 007-0000014156, 007-0000016617 Percent Rate Change Request: 95	VA_Proposed Rate Tables_200 Series_20180830.pdf,	11/01/2018 By: Andrea Steffan
<i>Previous Version</i>						
1	Rate Tables	MM-200-P-VA et al.	Revised	Previous State Filing Number: This form and all associated riders were originally approved in 2000. Percent Rate Change Request: 95	VA_Proposed Rate Tables_200 Series_20180830.pdf,	08/30/2018 By: Shawn Stender
2	Rate Tables	MM-300-P-VA, MM-300-R1, MM-300-R2, MM-300-R3, MM-300-R4, MM-300-R5-VA, MM-300-R6-VA, MM-300-R7-VA, MM-300-R8, MM-300-R11-VA, MM-300-R12, MM-300-R13	Revised	Previous State Filing Number: 007-0000020015 Percent Rate Change Request: 97	VA_Proposed Rate Tables_300 Series_20180830.pdf,	11/01/2018 By: Andrea Steffan
<i>Previous Version</i>						
2	Rate Tables	MM-300-P-VA et al.	Revised	Previous State Filing Number: This form and all associated riders were originally approved in 2003. Percent Rate Change Request: 97	VA_Proposed Rate Tables_300 Series_20180830.pdf,	08/30/2018 By: Shawn Stender
3	Rate Tables	MM-400-P-VA, MM-	Revised	Previous State Filing	VA_Proposed Rate	11/01/2018

State: Virginia Filing Company: Massachusetts Mutual Life Insurance Company  
 TOI/Sub-TOI: LTC03I Individual Long Term Care/LTC03I.001 Qualified  
 Product Name: Long-Term Care  
 Project Name/Number: MassMutual LTC Rate Increase Filing/145MML01-10.02

Rate/Rule Schedule Item Changes						
		400-R1-VA, MM-400-R2-VA, MM-400-R3, MM-400-R4, MM-400-R5-VA, MM-400-R7, MM-400-R8, MM-400-R11-VA, MM-400-R12, MM-400-R13, MM-400-R14		Number: 007-0000023278 Percent Rate Change Request: 92	Tables_400 Series_20180830.pdf,	By: Andrea Steffan
Previous Version						
3	Rate Tables	MM-400-P-VA et al.	Revised	Previous State Filing Number: This form and all associated riders were originally approved in 2004. Percent Rate Change Request: 92	VA_Proposed Rate Tables_400 Series_20180830.pdf,	08/30/2018 By: Shawn Stender
4	Rate Tables	MM500-P-VA, MM501-P-VA, MM500R-EEP, MM500R-WOE, MM500R-MTH, MM500R-IND-1-VA, MM500R-COMP, MM500R-SIP, MM500R-ROB, MM500R-SBN-VA, MM500R-ROP, MM500R-FROP, MM500R-WOP, MM500R-SVR, MM500R-SCB, MME-10P, MME-P65	Revised	Previous State Filing Number: LFCR-125265510 Percent Rate Change Request: 72	VA_Proposed Rate Tables_500 Series_20180830.pdf,	11/01/2018 By: Andrea Steffan
Previous Version						
4	Rate Tables	MM500-P-VA, MM501-P-VA, et al.	Revised	Previous State Filing Number: This form and all associated riders were originally approved in 2008. Percent Rate Change Request: 72	VA_Proposed Rate Tables_500 Series_20180830.pdf,	08/30/2018 By: Shawn Stender
5	Rate Tables	MM500-P-1-VA,	Revised	Previous State Filing	VA_Proposed Rate	11/01/2018

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

Rate/Rule Schedule Item Changes						
		MM501-P-1-VA, MM500R-EEP-1, MM500R-WOE-1, MM500R-MTH-1, MM500R-COMP-1, MM500R-ROB-1, MM500R-SBN-1-VA, MM500R-ROP-1, MM500R-FROP-1, MM500R-WOP-1, MM500R-SVR-1, MM500R-SCB-1, MME-10P-1, MMEP65-1		Number: LFCR-127179493 Percent Rate Change Request: 33	Tables_511 Series_20180830.pdf,	By: Andrea Steffan
<i>Previous Version</i>						
5	Rate Tables	MM500-P-1-VA, MM501-P-1-VA, et al.	Revised	Previous State Filing Number: This form and all associated riders were originally approved in 2011. Percent Rate Change Request: 33	VA_Proposed Rate Tables_511 Series_20180830.pdf,	08/30/2018 By: Shawn Stender

**Conclusion:**

Thank you for working with us to complete this filing. Please let us know if you have any additional questions.

Sincerely,  
Andrea Steffan

<b>SERFF Tracking #:</b>	MILL-131569310	<b>State Tracking #:</b>	MILL-131569310	<b>Company Tracking #:</b>	MASSMUTUAL
<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company		
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified				
<b>Product Name:</b>	Long-Term Care				
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02				

## Amendment Letter

Submitted Date: 05/14/2021

### Comments:

Thank you for reviewing this filing. The company has made an update to its policyowner notification letter. As such, this amendment is being submitted to provide a revised notification letter to be used for the requested rate increase. Also included with this amendment are the appropriate revised statement of variability, certification of compliance, and readability certification for the form. Please note that the attached documents were prepared by MassMutual. Milliman did not audit the attached documents, but did review them for reasonableness. Please let us know if you have questions. Thank you.

### Changed Items:



State: Virginia Filing Company: Massachusetts Mutual Life Insurance Company  
 TOI/Sub-TOI: LTC03I Individual Long Term Care/LTC03I.001 Qualified  
 Product Name: Long-Term Care  
 Project Name/Number: MassMutual LTC Rate Increase Filing/145MML01-10.02

Form Schedule Item Changes								
Item No.	Form Name	Form Number	Form Type	Form Action	Action Specific Data	Readability Score	Attachments	Submitted
1	Notice of Premium Increase	FR2251-VA-1 (0820)	OTH	Initial		40.100	FR2251-VA-1 (0820) 202105.pdf	Date Submitted: 05/14/2021 By:
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0820)	OTH	Initial		40.100	FR2251-VA-1 (0820) 202104.pdf	Date Submitted: 04/27/2021 By: Alex Moore
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0820)	OTH	Initial		40.100	FR2251-VA-1 (0820).pdf	Date Submitted: 02/18/2021 By: Jack Bridges
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0820)	OTH	Initial		40.700	FR2251-VA-1 (0820).pdf	Date Submitted: 02/01/2021 By: Jack Bridges
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0820)	OTH	Initial		40.300	FR2251-VA-1 (0820).pdf	Date Submitted: 12/02/2020 By: Shawn Stender
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0820)	OTH	Initial		40.100	FR2251-VA-1 (0820).pdf	Date Submitted: 11/09/2020 By: Shawn Stender
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0820)	OTH	Initial		40.300	FR2251-VA-1 (0820).pdf	Date Submitted: 08/13/2020 By: Shawn Stender
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0420)	OTH	Initial		40.000	Notification Letter 20200616 VA with form number.pdf	Date Submitted: 06/17/2020 By:
Previous Version								

State: Virginia Filing Company: Massachusetts Mutual Life Insurance Company  
 TOI/Sub-TOI: LTC03I Individual Long Term Care/LTC03I.001 Qualified  
 Product Name: Long-Term Care  
 Project Name/Number: MassMutual LTC Rate Increase Filing/145MML01-10.02

Form Schedule Item Changes								
Item No.	Form Name	Form Number	Form Type	Form Action	Action Specific Data	Readability Score	Attachments	Submitted
1	Notice of Premium Increase	FR2251-VA-1 (0420)	OTH	Initial		40.300	Notification Letter 20200429 VA with form number.pdf	Date Submitted: 04/30/2020 By: Shawn Stender
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0320)	OTH	Initial		40.300	Notification Letter 20200323 VA with form number.pdf	Date Submitted: 03/27/2020 By: Shawn Stender
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0819)	OTH	Initial		40.400	Notification Letter 20190827 VA with form number.pdf	Date Submitted: 09/05/2019 By:
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0618)	OTH	Initial		40.600	Notification Letter 20190424 VA with form number.pdf	Date Submitted: 04/29/2019 By: Andrea Steffan
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0618)	OTH	Initial		40.600	Notification Letter 20181023 VA with form number.pdf	Date Submitted: 11/02/2018 By:
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0618)	OTH	Initial		40.500	Notification Letter 20180822 VA with form number.pdf	Date Submitted: 08/30/2018 By: Shawn Stender

No Rate Schedule Items Changed.

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

Supporting Document Schedule Item Changes	
<b>Satisfied - Item:</b>	Certification of Compliance
<b>Comments:</b>	
<b>Attachment(s):</b>	VA Certificate of Compliance 202105.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20210426.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20210217.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20210201.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20201202.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20201106.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200812.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200616.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200429.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200323.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20190827 signed.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20181026 signed.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance.pdf</i>

<b>Satisfied - Item:</b>	L&H Readability - Health
<b>Comments:</b>	
<b>Attachment(s):</b>	VA Readability Certification 202105.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20210426 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20210217 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20210129 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20201202 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20201106 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20200812 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20200616 VA Readability Certification.pdf</i> <i>Election Form 20200429 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20200429 VA Readability Certification.pdf</i> <i>Election Form 20200429 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20200323 VA Readability Certification.pdf</i> <i>Election Form 20200323 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20190827 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20190424 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20181026 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20180824 VA Readability Certification.pdf</i>

<b>Satisfied - Item:</b>	Statement of Variability
<b>Comments:</b>	
<b>Attachment(s):</b>	SOV for FR2251EF-VA 202104.pdf SOV for FR2251-VA-1 (0820) 202105.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>SOV for FR2251-VA-1 (0820) 202104.pdf</i> <i>SOV for FR2251EF-VA 202104.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>SOV for FR2251-VA-1 (0820).pdf</i>

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

	<i>SOV for FR2251EF-VA.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>SOV for FR2251-VA-1 (0820).pdf</i> <i>SOV for FR2251EF-VA.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>SOV for FR2251-VA-1 (0820).pdf</i> <i>SOV for FR2251EF-VA.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>SOV for FR2251-VA-1 (0820).pdf</i> <i>SOV for FR2251EF-VA.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Statement of Variability Notification Letter 20200616 VA.pdf</i> <i>Statement of Variability Election Form 20200429 VA.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Statement of Variability Notification Letter 20200429 VA.pdf</i> <i>Statement of Variability Election Form 20200429 VA.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Statement of Variability Notification Letter 20200323 VA.pdf</i> <i>Statement of Variability Election Form 20200323 VA.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Statement of Variability 20190827 VA.pdf</i>
<i>Previous Version</i>	

<b>SERFF Tracking #:</b>	MILL-131569310	<b>State Tracking #:</b>	MILL-131569310	<b>Company Tracking #:</b>	MASSMUTUAL
<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company		
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified				
<b>Product Name:</b>	Long-Term Care				
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02				
<b>Satisfied - Item:</b>	Statement of Variability				
<b>Comments:</b>					
<b>Attachment(s):</b>	FR2251-VA-1 (0618).SOV.20190424.pdf				
Previous Version					
<b>Satisfied - Item:</b>	Statement of Variability				
<b>Comments:</b>					
<b>Attachment(s):</b>	FR2251-VA-1 (0618).SOV.pdf				
Previous Version					
<b>Satisfied - Item:</b>	Statement of Variability				
<b>Comments:</b>					
<b>Attachment(s):</b>	FR2251-VA-1 (0618).SOV.pdf				



<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

## Amendment Letter

Submitted Date: 12/14/2020

Comments:

Thank you for reviewing this filing. This amendment is being submitted to include a revised version of the “John Doe” sample policyowner notification letter to be used for the requested rate increase. Since no changes have been made to the election form since the previous “John Doe” version of the election form was submitted, we have reattached the “John Doe” election form submitted August 13, 2020. Please note that the attached documents were prepared by MassMutual. Milliman did not audit the attached documents, but did review them for reasonableness. Please let us know if you have any questions. Thank you.

Changed Items:

*No Form Schedule Items Changed.*

*No Rate Schedule Items Changed.*

Supporting Document Schedule Item Changes	
<b>Satisfied - Item:</b>	John Doe Sample Policyowner Notification Letter
<b>Comments:</b>	
<b>Attachment(s):</b>	FR2251-VA-1 (John Doe Sample).pdf FR2251EF-VA (John Doe Sample).pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>John Doe Sample Policyowner Notification Letter</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>FR2251-VA-1 (John Doe Sample).pdf FR2251EF-VA (John Doe Sample).pdf</i>

<b>SERFF Tracking #:</b>	MILL-131569310	<b>State Tracking #:</b>	MILL-131569310	<b>Company Tracking #:</b>	MASSMUTUAL
<hr/>					
<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company		
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified				
<b>Product Name:</b>	Long-Term Care				
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02				

## Amendment Letter

Submitted Date: 07/30/2020

### Comments:

Thank you for reviewing this filing. This amendment provides a letter in response to the phone conversation between representatives of the Bureau and Milliman on June 25, 2020 regarding the previous amendment letter dated June 16, 2020.

As noted in the attached letter, the Rate/Rule Schedule tab has been updated to reflect the originally proposed rate tables dated August 30, 2018.

Please let us know if you have any questions. Thank you.

### Changed Items:

*No Form Schedule Items Changed.*

State: Virginia Filing Company: Massachusetts Mutual Life Insurance Company  
 TOI/Sub-TOI: LTC03I Individual Long Term Care/LTC03I.001 Qualified  
 Product Name: Long-Term Care  
 Project Name/Number: MassMutual LTC Rate Increase Filing/145MML01-10.02

Rate/Rule Schedule Item Changes						
Item No.	Document Name	Affected Form Numbers (Separated with commas)	Rate Action	Rate Action Information	Attachments	Date Submitted
1	Rate Tables	MM-200-P-VA, MM-200-R1, MM-200-R2, MM-200-R3, MM-200-R4, MM-200-R5-VA, MM-200-R6-VA, MM-200-R7-VA	Revised	Previous State Filing Number: 007-0000014156, 007-0000016617 Percent Rate Change Request: 95	VA_Proposed Rate Tables_200 Series_20180830.pdf,	07/30/2020 By:
Previous Version						
1	Rate Tables	MM-200-P-VA, MM-200-R1, MM-200-R2, MM-200-R3, MM-200-R4, MM-200-R5-VA, MM-200-R6-VA, MM-200-R7-VA	Revised	Previous State Filing Number: 007-0000014156, 007-0000016617 Percent Rate Change Request: 118	VA_Proposed Rate Tables_200 Series_20200616.pdf,	06/17/2020 By:
Previous Version						
1	Rate Tables	MM-200-P-VA, MM-200-R1, MM-200-R2, MM-200-R3, MM-200-R4, MM-200-R5-VA, MM-200-R6-VA, MM-200-R7-VA	Revised	Previous State Filing Number: 007-0000014156, 007-0000016617 Percent Rate Change Request: 95	VA_Proposed Rate Tables_200 Series_20180830.pdf,	11/01/2018 By: Andrea Steffan
Previous Version						
1	Rate Tables	MM-200-P-VA et al.	Revised	Previous State Filing Number: This form and all associated riders were originally approved in 2000. Percent Rate Change Request: 95	VA_Proposed Rate Tables_200 Series_20180830.pdf,	08/30/2018 By: Shawn Stender
2	Rate Tables	MM-300-P-VA, MM-300-R1, MM-300-R2, MM-300-R3, MM-300-R4, MM-300-R5-VA,	Revised	Previous State Filing Number: 007-0000020015 Percent Rate Change	VA_Proposed Rate Tables_300 Series_20180830.pdf,	07/30/2020 By:

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

Rate/Rule Schedule Item Changes						
		MM-300-R6-VA, MM-300-R7-VA, MM-300-R8, MM-300-R11-VA, MM-300-R12, MM-300-R13		Request: 97		
<i>Previous Version</i>						
2	Rate Tables	MM-300-P-VA, MM-300-R1, MM-300-R2, MM-300-R3, MM-300-R4, MM-300-R5-VA, MM-300-R6-VA, MM-300-R7-VA, MM-300-R8, MM-300-R11-VA, MM-300-R12, MM-300-R13	Revised	Previous State Filing Number: 007-0000020015 Percent Rate Change Request: 122	VA_Proposed Rate Tables_300 Series_20200616.pdf,	06/17/2020 By:
<i>Previous Version</i>						
2	Rate Tables	MM-300-P-VA, MM-300-R1, MM-300-R2, MM-300-R3, MM-300-R4, MM-300-R5-VA, MM-300-R6-VA, MM-300-R7-VA, MM-300-R8, MM-300-R11-VA, MM-300-R12, MM-300-R13	Revised	Previous State Filing Number: 007-0000020015 Percent Rate Change Request: 97	VA_Proposed Rate Tables_300 Series_20180830.pdf,	11/01/2018 By: Andrea Steffan
<i>Previous Version</i>						
2	Rate Tables	MM-300-P-VA et al.	Revised	Previous State Filing Number: This form and all associated riders were originally approved in 2003. Percent Rate Change Request: 97	VA_Proposed Rate Tables_300 Series_20180830.pdf,	08/30/2018 By: Shawn Stender
3	Rate Tables	MM-400-P-VA, MM-400-R1-VA, MM-400-R2-VA, MM-400-R3, MM-400-R4, MM-400-R5-VA, MM-400-R7, MM-400-R8, MM-400-R11-VA, MM-400-R12, MM-400-R13, MM-400-R14	Revised	Previous State Filing Number: 007-0000023278 Percent Rate Change Request: 92	VA_Proposed Rate Tables_400 Series_20180830.pdf,	07/30/2020 By:

State:	Virginia	Filing Company:	Massachusetts Mutual Life Insurance Company
TOI/Sub-TOI:	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
Product Name:	Long-Term Care		
Project Name/Number:	MassMutual LTC Rate Increase Filing/145MML01-10.02		

Rate/Rule Schedule Item Changes						
<i>Previous Version</i>						
3	Rate Tables	MM-400-P-VA, MM-400-R1-VA, MM-400-R2-VA, MM-400-R3, MM-400-R4, MM-400-R5-VA, MM-400-R7, MM-400-R8, MM-400-R11-VA, MM-400-R12, MM-400-R13, MM-400-R14	Revised	Previous State Filing Number: 007-0000023278 Percent Rate Change Request: 112	VA_Proposed Rate Tables_400 Series_20200616.pdf,	06/17/2020 By:
<i>Previous Version</i>						
3	Rate Tables	MM-400-P-VA, MM-400-R1-VA, MM-400-R2-VA, MM-400-R3, MM-400-R4, MM-400-R5-VA, MM-400-R7, MM-400-R8, MM-400-R11-VA, MM-400-R12, MM-400-R13, MM-400-R14	Revised	Previous State Filing Number: 007-0000023278 Percent Rate Change Request: 92	VA_Proposed Rate Tables_400 Series_20180830.pdf,	11/01/2018 By: Andrea Steffan
<i>Previous Version</i>						
3	Rate Tables	MM-400-P-VA et al.	Revised	Previous State Filing Number: This form and all associated riders were originally approved in 2004. Percent Rate Change Request: 92	VA_Proposed Rate Tables_400 Series_20180830.pdf,	08/30/2018 By: Shawn Stender
4	Rate Tables	MM500-P-VA, MM501-P-VA, MM500R-EEP, MM500R-WOE, MM500R-MTH, MM500R-IND-1-VA, MM500R-COMP, MM500R-SIP, MM500R-ROB, MM500R-SBN-VA, MM500R-ROP, MM500R-FROP, MM500R-WOP, MM500R-SVR, MM500R-SCB, MME-	Revised	Previous State Filing Number: LFCR-125265510 Percent Rate Change Request: 72	VA_Proposed Rate Tables_500 Series_20180830.pdf,	07/30/2020 By:

State:	Virginia	Filing Company:	Massachusetts Mutual Life Insurance Company
TOI/Sub-TOI:	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
Product Name:	Long-Term Care		
Project Name/Number:	MassMutual LTC Rate Increase Filing/145MML01-10.02		

Rate/Rule Schedule Item Changes						
		10P, MME-P65				
<i>Previous Version</i>						
4	Rate Tables	MM500-P-VA, MM501-P-VA, MM500R-EEP, MM500R-WOE, MM500R-MTH, MM500R-IND-1-VA, MM500R-COMP, MM500R-SIP, MM500R-ROB, MM500R-SBN-VA, MM500R-ROP, MM500R-FROP, MM500R-WOP, MM500R-SVR, MM500R-SCB, MME-10P, MME-P65	Revised	Previous State Filing Number: LFCR-125265510 Percent Rate Change Request: 77	VA_Proposed Rate Tables_500 Series_20200616.pdf,	06/17/2020 By:
<i>Previous Version</i>						
4	Rate Tables	MM500-P-VA, MM501-P-VA, MM500R-EEP, MM500R-WOE, MM500R-MTH, MM500R-IND-1-VA, MM500R-COMP, MM500R-SIP, MM500R-ROB, MM500R-SBN-VA, MM500R-ROP, MM500R-FROP, MM500R-WOP, MM500R-SVR, MM500R-SCB, MME-10P, MME-P65	Revised	Previous State Filing Number: LFCR-125265510 Percent Rate Change Request: 72	VA_Proposed Rate Tables_500 Series_20180830.pdf,	11/01/2018 By: Andrea Steffan
<i>Previous Version</i>						
4	Rate Tables	MM500-P-VA, MM501-P-VA, et al.	Revised	Previous State Filing Number: This form and all associated riders were originally approved in 2008. Percent Rate Change Request: 72	VA_Proposed Rate Tables_500 Series_20180830.pdf,	08/30/2018 By: Shawn Stender
5	Rate Tables	MM500-P-1-VA,	Revised	Previous State Filing	VA_Proposed Rate	07/30/2020

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

Rate/Rule Schedule Item Changes						
		MM501-P-1-VA, MM500R-EEP-1, MM500R-WOE-1, MM500R-MTH-1, MM500R-COMP-1, MM500R-ROB-1, MM500R-SBN-1-VA, MM500R-ROP-1, MM500R-FROP-1, MM500R-WOP-1, MM500R-SVR-1, MM500R-SCB-1, MME-10P-1, MMEP65-1		Number: LFCR-127179493 Percent Rate Change Request: 33	Tables_511 Series_20180830.pdf,	By:
<i>Previous Version</i>						
5	Rate Tables	MM500-P-1-VA, MM501-P-1-VA, MM500R-EEP-1, MM500R-WOE-1, MM500R-MTH-1, MM500R-COMP-1, MM500R-ROB-1, MM500R-SBN-1-VA, MM500R-ROP-1, MM500R-FROP-1, MM500R-WOP-1, MM500R-SVR-1, MM500R-SCB-1, MME-10P-1, MMEP65-1	Revised	Previous State Filing Number: LFCR-127179493 Percent Rate Change Request: 33	VA_Proposed Rate Tables_511 Series_20200616.pdf,	06/17/2020 By:
<i>Previous Version</i>						
5	Rate Tables	MM500-P-1-VA, MM501-P-1-VA, MM500R-EEP-1, MM500R-WOE-1, MM500R-MTH-1, MM500R-COMP-1, MM500R-ROB-1, MM500R-SBN-1-VA, MM500R-ROP-1, MM500R-FROP-1, MM500R-WOP-1, MM500R-SVR-1, MM500R-SCB-1, MME-10P-1, MMEP65-1	Revised	Previous State Filing Number: LFCR-127179493 Percent Rate Change Request: 33	VA_Proposed Rate Tables_511 Series_20180830.pdf,	11/01/2018 By: Andrea Steffan

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

Rate/Rule Schedule Item Changes						
		1				
<i>Previous Version</i>						
5	Rate Tables	MM500-P-1-VA, MM501-P-1-VA, et al.	Revised	Previous State Filing Number: This form and all associated riders were originally approved in 2011. Percent Rate Change Request: 33	VA_Proposed Rate Tables_511 Series_20180830.pdf,	08/30/2018 By: Shawn Stender

Supporting Document Schedule Item Changes	
<b>Satisfied - Item:</b>	July 30, 2020 Amendment Letter
<b>Comments:</b>	
<b>Attachment(s):</b>	VA_Amendment_MML_LRRS_20200730.pdf



<b>SERFF Tracking #:</b>	MILL-131569310	<b>State Tracking #:</b>	MILL-131569310	<b>Company Tracking #:</b>	MASSMUTUAL
<hr/>					
<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company		
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified				
<b>Product Name:</b>	Long-Term Care				
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02				

## Amendment Letter

Submitted Date: 06/17/2020

Comments:

On behalf of Missy Gordon, thank you for reviewing this filing. This amendment is being submitted to revise the requested rate increase for this rate increase filing.

A revised version of the policyowner notification letter has also been attached on the Form Schedule tab of SERFF; this letter reflects a change for the Department's June 10, 2020 state message regarding the weblink to be used in rate increase notification letters. We have also attached an updated statement of variability and readability certification. Please note that the attached policyowner notification letter and associated certifications were prepared by MassMutual. Milliman did not audit the attached documents, but did review them for reasonableness.

Please let us know if you have any questions. Thank you.

Changed Items:

State: Virginia Filing Company: Massachusetts Mutual Life Insurance Company  
 TOI/Sub-TOI: LTC03I Individual Long Term Care/LTC03I.001 Qualified  
 Product Name: Long-Term Care  
 Project Name/Number: MassMutual LTC Rate Increase Filing/145MML01-10.02

Form Schedule Item Changes								
Item No.	Form Name	Form Number	Form Type	Form Action	Action Specific Data	Readability Score	Attachments	Submitted
1	Notice of Premium Increase	FR2251-VA-1 (0420)	OTH	Initial		40.000	Notification Letter 20200616 VA with form number.pdf	Date Submitted: 06/17/2020 By:
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0420)	OTH	Initial		40.300	Notification Letter 20200429 VA with form number.pdf	Date Submitted: 04/30/2020 By: Shawn Stender
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0320)	OTH	Initial		40.300	Notification Letter 20200323 VA with form number.pdf	Date Submitted: 03/27/2020 By: Shawn Stender
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0819)	OTH	Initial		40.400	Notification Letter 20190827 VA with form number.pdf	Date Submitted: 09/05/2019 By:
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0618)	OTH	Initial		40.600	Notification Letter 20190424 VA with form number.pdf	Date Submitted: 04/29/2019 By: Andrea Steffan
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0618)	OTH	Initial		40.600	Notification Letter 20181023 VA with form number.pdf	Date Submitted: 11/02/2018 By:
Previous Version								
1	Notice of Premium Increase	FR2251-VA-1 (0618)	OTH	Initial		40.500	Notification Letter 20180822 VA with form number.pdf	Date Submitted: 08/30/2018 By: Shawn Stender

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

Rate/Rule Schedule Item Changes						
Item No.	Document Name	Affected Form Numbers (Separated with commas)	Rate Action	Rate Action Information	Attachments	Date Submitted
1	Rate Tables	MM-200-P-VA, MM-200-R1, MM-200-R2, MM-200-R3, MM-200-R4, MM-200-R5-VA, MM-200-R6-VA, MM-200-R7-VA	Revised	Previous State Filing Number: 007-0000014156, 007-0000016617 Percent Rate Change Request: 118	VA_Proposed Rate Tables_200 Series_20200616.pdf,	06/17/2020 By:
<i>Previous Version</i>						
1	Rate Tables	MM-200-P-VA, MM-200-R1, MM-200-R2, MM-200-R3, MM-200-R4, MM-200-R5-VA, MM-200-R6-VA, MM-200-R7-VA	Revised	Previous State Filing Number: 007-0000014156, 007-0000016617 Percent Rate Change Request: 95	VA_Proposed Rate Tables_200 Series_20180830.pdf,	11/01/2018 By: Andrea Steffan
<i>Previous Version</i>						
1	Rate Tables	MM-200-P-VA et al.	Revised	Previous State Filing Number: This form and all associated riders were originally approved in 2000. Percent Rate Change Request: 95	VA_Proposed Rate Tables_200 Series_20180830.pdf,	08/30/2018 By: Shawn Stender
2	Rate Tables	MM-300-P-VA, MM-300-R1, MM-300-R2, MM-300-R3, MM-300-R4, MM-300-R5-VA, MM-300-R6-VA, MM-300-R7-VA, MM-300-R8, MM-300-R11-VA, MM-300-R12, MM-300-R13	Revised	Previous State Filing Number: 007-0000020015 Percent Rate Change Request: 122	VA_Proposed Rate Tables_300 Series_20200616.pdf,	06/17/2020 By:
<i>Previous Version</i>						
2	Rate Tables	MM-300-P-VA, MM-300-R1, MM-300-R2,	Revised	Previous State Filing Number:	VA_Proposed Rate Tables_300	11/01/2018 By: Andrea Steffan

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

Rate/Rule Schedule Item Changes						
		MM-300-R3, MM-300-R4, MM-300-R5-VA, MM-300-R6-VA, MM-300-R7-VA, MM-300-R8, MM-300-R11-VA, MM-300-R12, MM-300-R13		007-0000020015 Percent Rate Change Request: 97	Series_20180830.pdf,	
<i>Previous Version</i>						
2	Rate Tables	MM-300-P-VA et al.	Revised	Previous State Filing Number: This form and all associated riders were originally approved in 2003. Percent Rate Change Request: 97	VA_Proposed Rate Tables_300 Series_20180830.pdf,	08/30/2018 By: Shawn Stender
3	Rate Tables	MM-400-P-VA, MM-400-R1-VA, MM-400-R2-VA, MM-400-R3, MM-400-R4, MM-400-R5-VA, MM-400-R7, MM-400-R8, MM-400-R11-VA, MM-400-R12, MM-400-R13, MM-400-R14	Revised	Previous State Filing Number: 007-0000023278 Percent Rate Change Request: 112	VA_Proposed Rate Tables_400 Series_20200616.pdf,	06/17/2020 By:
<i>Previous Version</i>						
3	Rate Tables	MM-400-P-VA, MM-400-R1-VA, MM-400-R2-VA, MM-400-R3, MM-400-R4, MM-400-R5-VA, MM-400-R7, MM-400-R8, MM-400-R11-VA, MM-400-R12, MM-400-R13, MM-400-R14	Revised	Previous State Filing Number: 007-0000023278 Percent Rate Change Request: 92	VA_Proposed Rate Tables_400 Series_20180830.pdf,	11/01/2018 By: Andrea Steffan
<i>Previous Version</i>						
3	Rate Tables	MM-400-P-VA et al.	Revised	Previous State Filing Number: This form and all associated riders were originally approved in 2004. Percent Rate Change	VA_Proposed Rate Tables_400 Series_20180830.pdf,	08/30/2018 By: Shawn Stender

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

Rate/Rule Schedule Item Changes						
				<i>Request:</i> 92		
4	Rate Tables	MM500-P-VA, MM501-P-VA, MM500R-EEP, MM500R-WOE, MM500R-MTH, MM500R-IND-1-VA, MM500R-COMP, MM500R-SIP, MM500R-ROB, MM500R-SBN-VA, MM500R-ROP, MM500R-FROP, MM500R-WOP, MM500R-SVR, MM500R-SCB, MME-10P, MME-P65	Revised	Previous State Filing Number: LFCR-125265510 Percent Rate Change Request: 77	VA_Proposed Rate Tables_500 Series_20200616.pdf,	06/17/2020 By:
<i>Previous Version</i>						
4	Rate Tables	MM500-P-VA, MM501-P-VA, MM500R-EEP, MM500R-WOE, MM500R-MTH, MM500R-IND-1-VA, MM500R-COMP, MM500R-SIP, MM500R-ROB, MM500R-SBN-VA, MM500R-ROP, MM500R-FROP, MM500R-WOP, MM500R-SVR, MM500R-SCB, MME-10P, MME-P65	Revised	Previous State Filing Number: LFCR-125265510 Percent Rate Change Request: 72	VA_Proposed Rate Tables_500 Series_20180830.pdf,	11/01/2018 By: Andrea Steffan
<i>Previous Version</i>						
4	Rate Tables	MM500-P-VA, MM501-P-VA, et al.	Revised	Previous State Filing Number: This form and all associated riders were originally approved in 2008. Percent Rate Change Request: 72	VA_Proposed Rate Tables_500 Series_20180830.pdf,	08/30/2018 By: Shawn Stender
5	Rate Tables	MM500-P-1-VA,	Revised	Previous State Filing	VA_Proposed Rate	06/17/2020

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

Rate/Rule Schedule Item Changes						
		MM501-P-1-VA, MM500R-EEP-1, MM500R-WOE-1, MM500R-MTH-1, MM500R-COMP-1, MM500R-ROB-1, MM500R-SBN-1-VA, MM500R-ROP-1, MM500R-FROP-1, MM500R-WOP-1, MM500R-SVR-1, MM500R-SCB-1, MME-10P-1, MMEP65-1		Number: LFCR-127179493 Percent Rate Change Request: 33	Tables_511 Series_20200616.pdf,	By:
<i>Previous Version</i>						
5	Rate Tables	MM500-P-1-VA, MM501-P-1-VA, MM500R-EEP-1, MM500R-WOE-1, MM500R-MTH-1, MM500R-COMP-1, MM500R-ROB-1, MM500R-SBN-1-VA, MM500R-ROP-1, MM500R-FROP-1, MM500R-WOP-1, MM500R-SVR-1, MM500R-SCB-1, MME-10P-1, MMEP65-1	Revised	Previous State Filing Number: LFCR-127179493 Percent Rate Change Request: 33	VA_Proposed Rate Tables_511 Series_20180830.pdf,	11/01/2018 By: Andrea Steffan
<i>Previous Version</i>						
5	Rate Tables	MM500-P-1-VA, MM501-P-1-VA, et al.	Revised	Previous State Filing Number: This form and all associated riders were originally approved in 2011. Percent Rate Change Request: 33	VA_Proposed Rate Tables_511 Series_20180830.pdf,	08/30/2018 By: Shawn Stender

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

Supporting Document Schedule Item Changes	
<b>Satisfied - Item:</b>	Certification of Compliance
<b>Comments:</b>	
<b>Attachment(s):</b>	VA Certificate of Compliance 20200616.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200429.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20200323.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20190827 signed.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20181026 signed.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance.pdf</i>

<b>Satisfied - Item:</b>	L&H Readability - Health
<b>Comments:</b>	
<b>Attachment(s):</b>	Notification Letter 20200616 VA Readability Certification.pdf Election Form 20200429 VA Readability Certification.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

<b>Attachment(s):</b>	<i>Notification Letter 20200429 VA Readability Certification.pdf Election Form 20200429 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20200323 VA Readability Certification.pdf Election Form 20200323 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20190827 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20190424 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20181026 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20180824 VA Readability Certification.pdf</i>

<b>Satisfied - Item:</b>	Statement of Variability
<b>Comments:</b>	
<b>Attachment(s):</b>	Statement of Variability Notification Letter 20200616 VA.pdf Statement of Variability Election Form 20200429 VA.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Statement of Variability Notification Letter 20200429 VA.pdf Statement of Variability Election Form 20200429 VA.pdf</i>



<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Statement of Variability Notification Letter 20200323 VA.pdf Statement of Variability Election Form 20200323 VA.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Statement of Variability 20190827 VA.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>FR2251-VA-1 (0618).SOV.20190424.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>FR2251-VA-1 (0618).SOV.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>FR2251-VA-1 (0618).SOV.pdf</i>

<b>Satisfied - Item:</b>	June 16, 2020 Amendment Letter
<b>Comments:</b>	
<b>Attachment(s):</b>	VA_Amendment_MML_LRRS_20200616.pdf

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

## Amendment Letter

Submitted Date: 09/05/2019

### Comments:

Thank you for reviewing this filing. The company has made updates to its policyowner notification letter. As such, this amendment is being submitted to provide a revised notification letter to be used for the requested rate increase. This notification letter is in compliance with 14VAC5-200-75. Also included with this amendment are the appropriate revised statement of variability, certification of compliance, and readability certification for the form. Thank you.

### Changed Items:

Form Schedule Item Changes								
Item No.	Form Name	Form Number	Form Type	Form Action	Action Specific Data	Readability Score	Attachments	Submitted
1	Notice of Premium Increase	FR2251-VA-1 (0819)	OTH	Initial		40.400	Notification Letter 20190827 VA with form number.pdf	Date Submitted: 09/05/2019 By:
<i>Previous Version</i>								
1	Notice of Premium Increase	FR2251-VA-1 (0618)	OTH	Initial		40.600	Notification Letter 20190424 VA with form number.pdf	Date Submitted: 04/29/2019 By: Andrea Steffan
<i>Previous Version</i>								
1	Notice of Premium Increase	FR2251-VA-1 (0618)	OTH	Initial		40.600	Notification Letter 20181023 VA with form number.pdf	Date Submitted: 11/02/2018 By:
<i>Previous Version</i>								
1	Notice of Premium Increase	FR2251-VA-1 (0618)	OTH	Initial		40.500	Notification Letter 20180822 VA with form number.pdf	Date Submitted: 08/30/2018 By: Shawn Stender

No Rate Schedule Items Changed.

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

Supporting Document Schedule Item Changes	
<b>Satisfied - Item:</b>	Certification of Compliance
<b>Comments:</b>	
<b>Attachment(s):</b>	VA Certificate of Compliance 20190827 signed.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance 20181026 signed.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance.pdf</i>

<b>Satisfied - Item:</b>	L&H Readability - Health
<b>Comments:</b>	
<b>Attachment(s):</b>	Notification Letter 20190827 VA Readability Certification.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20190424 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20181026 VA Readability Certification.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20180824 VA Readability Certification.pdf</i>

<b>Satisfied - Item:</b>	Statement of Variability
<b>Comments:</b>	
<b>Attachment(s):</b>	Statement of Variability 20190827 VA.pdf

<b>SERFF Tracking #:</b>	MILL-131569310	<b>State Tracking #:</b>	MILL-131569310	<b>Company Tracking #:</b>	MASSMUTUAL
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<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>FR2251-VA-1 (0618).SOV.20190424.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>FR2251-VA-1 (0618).SOV.pdf</i>
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>FR2251-VA-1 (0618).SOV.pdf</i>

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

## Amendment Letter

Submitted Date: 11/02/2018

Comments:

Thank you for reviewing this filing. This amendment is being submitted to include a revised sample policyowner notification letter to be used for the requested rate increase that is in compliance with 14VAC5-200-75. Also included with this amendment are the appropriate revised statement of variability, certification of compliance, and readability certification for the form. Please let us know if you have any questions. Thank you.

Changed Items:

Form Schedule Item Changes								
Item No.	Form Name	Form Number	Form Type	Form Action	Action Specific Data	Readability Score	Attachments	Submitted
1	Notice of Premium Increase	FR2251-VA-1 (0618)	OTH	Initial		40.600	Notification Letter 20181023 VA with form number.pdf	Date Submitted: 11/02/2018 By:
<i>Previous Version</i>								
1	Notice of Premium Increase	FR2251-VA-1 (0618)	OTH	Initial		40.500	Notification Letter 20180822 VA with form number.pdf	Date Submitted: 08/30/2018 By: Shawn Stender

No Rate Schedule Items Changed.

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

Supporting Document Schedule Item Changes	
<b>Satisfied - Item:</b>	Certification of Compliance
<b>Comments:</b>	
<b>Attachment(s):</b>	VA Certificate of Compliance 20181026 signed.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Certification of Compliance</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA Certificate of Compliance.pdf</i>
<b>Satisfied - Item:</b>	L&H Readability - Health
<b>Comments:</b>	
<b>Attachment(s):</b>	Notification Letter 20181026 VA Readability Certification.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>L&amp;H Readability - Health</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>Notification Letter 20180824 VA Readability Certification.pdf</i>
<b>Satisfied - Item:</b>	Statement of Variability
<b>Comments:</b>	
<b>Attachment(s):</b>	FR2251-VA-1 (0618).SOV.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Statement of Variability</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>FR2251-VA-1 (0618).SOV.pdf</i>

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

## Amendment Letter

Submitted Date: 09/04/2018

Comments:  
Thank you for reviewing this filing. This amendment is being submitted to revise the supporting documents for this rate increase filing. The only revision made was adding an article to the Supplement to the Actuarial Memorandum that was inadvertently excluded from the initial submission documents. Please let us know if you any questions. Thank you.

Changed Items:  
No Form Schedule Items Changed.  
No Rate Schedule Items Changed.

Supporting Document Schedule Item Changes	
<b>Satisfied - Item:</b>	Supplement to the Actuarial Memorandum
<b>Comments:</b>	
<b>Attachment(s):</b>	VA_Suplement_MML_LRRS_20180830.pdf VA_Supplement Attachments 8-16_20180830.xlsb Recouping Past LTC Losses.pdf
<i>Previous Version</i>	
<b>Satisfied - Item:</b>	<i>Supplement to the Actuarial Memorandum</i>
<b>Comments:</b>	
<b>Attachment(s):</b>	<i>VA_Suplement_MML_LRRS_20180830.pdf VA_Supplement Attachments 8-16_20180830.xlsb</i>

**State:** Virginia **Filing Company:** Massachusetts Mutual Life Insurance Company  
**TOI/Sub-TOI:** LTC03I Individual Long Term Care/LTC03I.001 Qualified  
**Product Name:** Long-Term Care  
**Project Name/Number:** MassMutual LTC Rate Increase Filing/145MML01-10.02

## Note To Reviewer

**Created By:**

Megan Anderson on 01/14/2021 02:30 PM

**Last Edited By:**

Bobby Toone

**Submitted On:**

04/13/2021 05:11 PM

**Subject:**

Status Update

**Comments:**

We respectfully request a status update on this filing. Thank you.



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<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

## Note To Filer

**Created By:**

Bobby Toone on 12/02/2020 05:04 PM

**Last Edited By:**

Bobby Toone

**Submitted On:**

04/13/2021 05:11 PM

**Subject:**

Revised "John Doe" versions of forms

**Comments:**

This serves as a reminder to the company to submit revised "John Doe" versions of the Notice of Premium Increase and the Personalized Options Election Form.

**State:** Virginia **Filing Company:** Massachusetts Mutual Life Insurance Company  
**TOI/Sub-TOI:** LTC03I Individual Long Term Care/LTC03I.001 Qualified  
**Product Name:** Long-Term Care  
**Project Name/Number:** MassMutual LTC Rate Increase Filing/145MML01-10.02

## Note To Reviewer

**Created By:**

Megan Anderson on 10/23/2020 02:05 PM

**Last Edited By:**

Bobby Toone

**Submitted On:**

04/13/2021 05:11 PM

**Subject:**

Status Update

**Comments:**

We respectfully request a status update on this filing. Thank you.

**State:** Virginia **Filing Company:** Massachusetts Mutual Life Insurance Company  
**TOI/Sub-TOI:** LTC03I Individual Long Term Care/LTC03I.001 Qualified  
**Product Name:** Long-Term Care  
**Project Name/Number:** MassMutual LTC Rate Increase Filing/145MML01-10.02

## Note To Filer

**Created By:**

Bobby Toone on 07/27/2020 03:33 PM

**Last Edited By:**

Bobby Toone

**Submitted On:**

08/25/2020 05:29 PM

**Subject:**

Extension Request

**Comments:**

An extension to August 15, 2020 is granted.

**State:** Virginia **Filing Company:** Massachusetts Mutual Life Insurance Company  
**TOI/Sub-TOI:** LTC03I Individual Long Term Care/LTC03I.001 Qualified  
**Product Name:** Long-Term Care  
**Project Name/Number:** MassMutual LTC Rate Increase Filing/145MML01-10.02

## Note To Reviewer

**Created By:**

Lauren Zenzen on 07/27/2020 01:27 PM

**Last Edited By:**

Bobby Toone

**Submitted On:**

08/25/2020 05:29 PM

**Subject:**

Extension Request

**Comments:**

As discussed with Bobby Toone this morning, we respectfully request an extension on the July 2, 2020 Objection Letter regarding requested changes to the policyowner notification letter. Our proposed due date is August 15, 2020. Please let us know if the Bureau is willing to grant this extension.

**State:** Virginia **Filing Company:** Massachusetts Mutual Life Insurance Company  
**TOI/Sub-TOI:** LTC03I Individual Long Term Care/LTC03I.001 Qualified  
**Product Name:** Long-Term Care  
**Project Name/Number:** MassMutual LTC Rate Increase Filing/145MML01-10.02

## Note To Reviewer

**Created By:**

Megan Anderson on 04/16/2020 12:29 PM

**Last Edited By:**

Bobby Toone

**Submitted On:**

07/02/2020 02:30 PM

**Subject:**

Status Update

**Comments:**

We respectfully request a status update on this filing. Thank you.

**State:** Virginia **Filing Company:** Massachusetts Mutual Life Insurance Company  
**TOI/Sub-TOI:** LTC03I Individual Long Term Care/LTC03I.001 Qualified  
**Product Name:** Long-Term Care  
**Project Name/Number:** MassMutual LTC Rate Increase Filing/145MML01-10.02

## Note To Reviewer

**Created By:**

Megan Anderson on 02/21/2020 02:41 PM

**Last Edited By:**

Bobby Toone

**Submitted On:**

07/02/2020 02:30 PM

**Subject:**

Status Update

**Comments:**

We respectfully request a status update on this filing. Thank you.

**State:** Virginia **Filing Company:** Massachusetts Mutual Life Insurance Company  
**TOI/Sub-TOI:** LTC03I Individual Long Term Care/LTC03I.001 Qualified  
**Product Name:** Long-Term Care  
**Project Name/Number:** MassMutual LTC Rate Increase Filing/145MML01-10.02

## Note To Reviewer

**Created By:**

Rylee Sevigny on 10/18/2019 11:48 AM

**Last Edited By:**

Bobby Toone

**Submitted On:**

07/02/2020 02:30 PM

**Subject:**

Status Update

**Comments:**

We respectfully request a status update on this filing. Thank you.

**State:** Virginia **Filing Company:** Massachusetts Mutual Life Insurance Company  
**TOI/Sub-TOI:** LTC03I Individual Long Term Care/LTC03I.001 Qualified  
**Product Name:** Long-Term Care  
**Project Name/Number:** MassMutual LTC Rate Increase Filing/145MML01-10.02

## Note To Reviewer

**Created By:**

Megan Anderson on 07/01/2019 09:41 AM

**Last Edited By:**

Bobby Toone

**Submitted On:**

07/30/2019 01:42 PM

**Subject:**

Status Update

**Comments:**

We respectfully request a status update on this filing. Thank you.



**State:** Virginia **Filing Company:** Massachusetts Mutual Life Insurance Company  
**TOI/Sub-TOI:** LTC03I Individual Long Term Care/LTC03I.001 Qualified  
**Product Name:** Long-Term Care  
**Project Name/Number:** MassMutual LTC Rate Increase Filing/145MML01-10.02

## Note To Reviewer

**Created By:**

Megan Anderson on 12/13/2018 03:14 PM

**Last Edited By:**

Bobby Toone

**Submitted On:**

07/02/2020 02:30 PM

**Subject:**

Status Update

**Comments:**

We respectfully request a status update on this filing. Thank you.

**State:** Virginia **Filing Company:** Massachusetts Mutual Life Insurance Company  
**TOI/Sub-TOI:** LTC03I Individual Long Term Care/LTC03I.001 Qualified  
**Product Name:** Long-Term Care  
**Project Name/Number:** MassMutual LTC Rate Increase Filing/145MML01-10.02

## Reviewer Note

**Created By:**

Bobby Toone on 02/14/2019 01:52 PM

**Last Edited By:**

Bobby Toone

**Submitted On:**

05/18/2021 05:09 PM

**Subject:**

Actuary Review and Final Report

**Comments:**

Sent to Shawn Parks - 02/14/2019

- Requested 02/27/2019 return.

Rec'd report - 2/28/2019

- Recommends Approval



**ACTUARIAL RESOURCES  
CORPORATION**  
CONSULTANTS • ACTUARIES

SHAWN D. PARKS, FSA, MAAA  
1114 CATAWBA RIVER RD • GREAT FALLS, SC 29055  
(803) 994 - 9895 • SHAWN.PARKS@ARCGA.COM

February 28, 2019

Life and Health Division  
Bureau of Insurance  
State Corporation Commission  
P. O. Box 1157  
Richmond, VA 23218

Subject: **Long Term Care Rate Increase Request  
SERFF Tracking #MILL-131569310**

At the request of the Virginia SCC Bureau of Insurance (the “Bureau”), I have reviewed the filing for the above captioned submission from **Massachusetts Mutual Life Insurance Company** (the “Company”). This is a filing of revised premium rates for a block of Individual Long Term Care Insurance plans. This block of business is not available for new issues.

### **Recommendation**

My review of this filing was performed according to the provisions of 14VAC5-200-150 and 14VAC5-200-153. Applicable Actuarial Standards of Practice were considered, including Actuarial Standard of Practice No. 18, “Long-Term Care Insurance” and Actuarial Standard of Practice No. 8, “Regulatory Filings for Rates and Financial Projections for Health Plans”. After review of the Company’s submission, I recommend that the Bureau approve the request without modification.

### **Background**

The Company submitted a request for a rate increase ranging from 0% to 100% and averaging 82%. There have been no prior rate increases in the state. This policy form was issued in Virginia from 2000-2013 and, as of 12/31/2016, there were 1,197 policyholders in force with \$1.9M of annualized premium for pre-stability, and 3,539 policyholders with \$8.7M premium for post-stability.

### **Analysis**

#### Assumptions

The interest assumption used in this analysis is based on the average maximum valuation interest rate, which ranges from 3.5% to 4.5%, averaging 4.1%. The Company originally priced with an interest rate of 4.0% to 6.5%.

For mortality, the Company used the 2012 IAM Basic table with adjustments to reflect historical experience. The original assumptions were based on the 1975-80 Table, 1994 GAM, and A2000 Table depending on issue era.

The lapse rates vary by policy series and duration, with the duration 9+ assumption of 0.5% to 0.9%. Original assumptions had an ultimate rate of 0.55% to 3.5%. In addition, the Company assumes CBUL election of about 5% (modeled as shock lapse) and reduced benefits for 13% of the policies.

The morbidity assumption is based on the 2014 Milliman LTCGs with Company adjustments to reflect historical claims experience. Adverse selection of 3% additional morbidity is assumed due to the increase. The original assumptions were based on the 2004 SOA LTC Study for the most recent policy series and the 1995 NNHS for older policies.

Both the morbidity and mortality include 10 years of improvement. These tend to offset each other in terms of the impact on loss ratio.

#### Actual-to-Expected

Factor	A/E
Mortality	82%
Lapse (9+)	74%-96%
Morbidity	100%

#### Loss Ratio Test

The minimum loss ratio standards under 14VAC5-200-150 and 14VAC5-200-153 are applicable to this filing. Since the Company is varying their rate increase request on a cellular level, I felt it appropriate to analyze the projections by segment as shown below:

Rate Stability	Inflation Type	Benefit Period	Original Lifetime LR	Before Increase Fut LR w/ ALR	Lifetime LR	After Increase Fut LR w/ ALR	Lifetime LR	Restated From Inception
Pre	None	Limited	50%	148%	77%	107%	70%	52%
Pre	None	Lifetime	68%	279%	134%	156%	101%	74%
Pre	Auto	Limited	54%	214%	109%	127%	89%	59%
Pre	Auto	Lifetime	71%	449%	215%	239%	152%	109%
Post	None	Limited	53%	85%	66%	67%	57%	49%
Post	None	Lifetime	66%	149%	116%	97%	85%	73%
Post	Auto	Limited	46%	129%	90%	81%	68%	52%
Post	Auto	Lifetime	64%	316%	195%	173%	130%	102%

Highlighted cells indicate that a particular test was failed.

Results from the dual loss ratio tests (60/80 for pre-stability and 58/85 for post-stability) are shown below.

Rate Stability	Inflation Type	Benefit Period	Dual Loss Ratio Test				
			PV Orig Prem	PV Incr Prem	Required Claims	PV Claims	P/F
Pre	None	Limited	50M	4M	33M	39M	PASS
Pre	None	Lifetime	177M	37M	150M	238M	PASS
Pre	Auto	Limited	69M	13M	51M	75M	PASS
Pre	Auto	Lifetime	636M	180M	596M	1,365M	PASS
Post	None	Limited	132M	20M	93M	88M	FAIL
Post	None	Lifetime	1,144M	352M	1,052M	1,332M	PASS
Post	Auto	Limited	104M	30M	86M	94M	PASS
Post	Auto	Lifetime	1,538M	613M	1,508M	3,006M	PASS

An alternative measure to test the recouping of past losses is to ensure that the present value of future losses in dollar terms is no less than if the original assumptions were to continue from this date forward. The table below displays the results.

Rate Stability	Inflation Type	Benefit Period	PV Future Losses Test		
			Original	Current	Proposed
Pre	None	Limited	-3M	-12M	-8M
Pre	None	Lifetime	-33M	-161M	-102M
Pre	Auto	Limited	-5M	-34M	-19M
Pre	Auto	Lifetime	-135M	-1,033M	-677M
Post	None	Limited	7M	-9M	9M
Post	None	Lifetime	-29M	-595M	-210M
Post	Auto	Limited	5M	-31M	-4M
Post	Auto	Lifetime	-177M	-2,142M	-1,225M

### State Rate Equity

This is the first rate increase request for these forms, so it is not possible to draw any conclusions as of yet. From the information submitted, it appears that the Company has requested or intends to request similar rate increases in all states.

### Conclusions

While the post-stability, no inflation, limited benefit period segment is slightly out of compliance with the 58/85 Test and PV Future Loss Test, I believe it would be reasonable to approve the request without modification.

### **Reliance and Qualifications**

I am providing this letter to the Bureau as the sole intended user. The scope of the review relates only to compliance with applicable laws and regulations relating to the actuarial aspects of the filing under consideration, and the intended purpose is to communicate my findings regarding this filing. Distribution of this letter to parties other than the Bureau by me or any other party does not constitute advice by me to those parties. The reliance

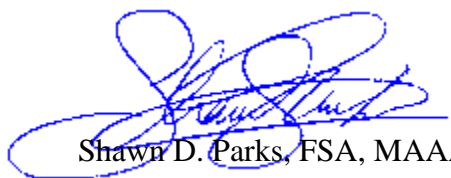
of parties other than the Bureau on any aspect of this work is not authorized by me and is done at their own risk.

In arriving at my opinion, I used and relied on information provided by the Company and the Bureau without independent investigation or verification. If this information is inaccurate, incomplete, or out of date, my findings and conclusions may need to be revised. While I have relied on the data provided without independent investigation or verification, I have reviewed the data for consistency and reasonableness. In the event that I found the data inconsistent or unreasonable, I have requested clarification.

I am a member of the American Academy of Actuaries and meet that body's Qualification Standards to render this opinion. I am responsible for this work and have utilized generally accepted actuarial methodologies in arriving at my opinion.

If you have any questions regarding this filing, please contact me for discussion.

Sincerely,



Shawn D. Parks, FSA, MAAA

**State:** Virginia **Filing Company:** Massachusetts Mutual Life Insurance Company  
**TOI/Sub-TOI:** LTC03I Individual Long Term Care/LTC03I.001 Qualified  
**Product Name:** Long-Term Care  
**Project Name/Number:** MassMutual LTC Rate Increase Filing/145MML01-10.02

## Reviewer Note

**Created By:**

Bobby Toone on 10/15/2018 04:32 PM

**Last Edited By:**

Bobby Toone

**Submitted On:**

05/18/2021 05:07 PM

**Subject:**

RRS

**Comments:**

RRS1

RRS2

## Reset Form

Massachusetts Mutual Life Insurance Company - NAIC # 65935

MILL-131569310

This rate increase will apply to policies on their next policy anniversary date following at least a 90-day policyowner notification period following disposition of this filing by the department of insurance.

2,230

82%

0%

100%

4.736

**(The Form Number and “Product Name”)**

**“Product Name”(if applicable)**

***This document is intended to help explain the rate filing and it is only a summary of the company's request. It is not intended to describe or include all factors or information considered in the review process. For more detailed information, please refer to the complete filing.***



## **Long Term Care Insurance Rate Request Summary**

### **Summary of Key Information**

Many factors have changed over the years that have impacted the pricing of long term care insurance policies. For example, the cost of long term care services continues to increase and today, people are living longer and the need for long term care is growing rapidly. Due to these types of changes, we now expect to pay higher amounts of benefits than had been originally anticipated. This anticipated increase in expected benefits has led to the need for us to increase premium rates.

## **Long Term Care Insurance Rate Request Summary Part 2 –To Be Completed by Bureau of Insurance**

Company Name and NAIC Number: Massachusetts Mutual Life Insurance Co.

NAIC Code: 65935

SERFF Tracking Number: MILL-131569310

Disposition: Approved & Filed

Approval Date: 5/18/2021

Revised Rates

Average Annual Premium Per Member: \$2,230

Average Requested Percentage Rate Change Per Member: 82.0%

Minimum Requested Percentage Rate Change Per Member: 0.0%

Maximum Requested Percentage Rate Change Per Member: 100.0%

Number of Policy Holders Affected: 4,736

### **Summary of the Bureau of Insurance's review of the rate request:**

The Company requested, and the Bureau approved a rate increase of 82% for this block of individual long-term care insurance policy forms.

The filing was reviewed by the Bureau's consulting actuary and determined to comply with the requirements for a rate increase set forth in 14VAC5-200-150 of the Virginia Administrative Code for policies issued prior to October 1, 2003, and 14VAC5-200-153 for policies issued on or after October 1, 2003. The review indicated that the anticipated loss ratio, reflecting claims payout, will be 119% with the increase, which exceeds the minimum required loss ratio.

The Company has advised that additional rate increases are needed to certify that rates will remain stable under moderately adverse conditions.

The primary reasons for the rate increase are that policyholders are living longer and keeping their policies in force longer, which has resulted in more claims being filed than the Company anticipated when the policy was originally priced. The Company determined that a premium increase is necessary to reflect that future claims are expected to be significantly higher on these policies than originally expected or priced and to ensure that sufficient funds are available to pay claims.

The Company is offering all policyholders options to reduce the premium increase by reducing their coverage. These reductions could be in the form of lower daily benefits, a shorter benefit period, a longer elimination period, the termination of riders or any combination of these reductions, or a paid-up policy. Specific options are included in the letter sent to all policyholders notifying them of the rate increase and can be discussed with the Company by calling its customer service department.

The filing can be reviewed on the Bureau's webpage under the Rate/Policy Form Search at:  
<https://scc.virginia.gov/boi/SERFFInquiry/LtcFilings.aspx>

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<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

## Post Submission Update Request Processed On 04/30/2019

Status:	Allowed
Created By:	Rylee Sevigny
Processed By:	Renee Benard
Comments:	

### Company Rate Information:

Company Name:Massachusetts Mutual Life Insurance Company

Field Name	Requested Change	Prior Value
Number of Policy Holders Affected for this Program	4736	4763

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

## Form Schedule

Lead Form Number:								
Item No.	Schedule Item Status	Form Name	Form Number	Form Type	Form Action	Action Specific Data	Readability Score	Attachments
1	Filed 05/18/2021	Notice of Premium Increase	FR2251-VA-1 (0820)	OTH	Initial		40.100	FR2251-VA-1 (0820) 202105.pdf
2	Filed 05/18/2021	Personalized Options Election Form	FR2251EF-VA (0820)	OTH	Initial		42.100	FR2251EF-VA 202104.pdf

### Form Type Legend:

<b>ADV</b>	Advertising	<b>AEF</b>	Application/Enrollment Form
<b>CER</b>	Certificate	<b>CERA</b>	Certificate Amendment, Insert Page, Endorsement or Rider
<b>DDP</b>	Data/Declaration Pages	<b>FND</b>	Funding Agreement (Annuity, Individual and Group)
<b>MTX</b>	Matrix	<b>NAP</b>	Network Access Plan
<b>NOC</b>	Notice of Coverage	<b>OTH</b>	Other
<b>OUT</b>	Outline of Coverage	<b>PJK</b>	Policy Jacket
<b>POL</b>	Policy/Contract/Fraternal Certificate	<b>POLA</b>	Policy/Contract/Fraternal Certificate: Amendment, Insert Page, Endorsement or Rider
<b>PRC</b>	Provider Contract/Provider Addendum/Provider Leading Agreement	<b>PRD</b>	Provider Directory

**Please read this letter carefully and in its entirety. It contains important information about your long term care insurance policy.** Using the contact information at the end of this letter, you may contact your financial professional or our Long Term Care Administrative Office with any questions regarding this letter or your long term care insurance coverage.

[Date]

[Policyowner Name]  
[Joint Policyowner Name]  
[Address]  
[City], [State] [Zip]

**RE: Notice of a Premium Increase to your Long Term Care Insurance Policy #[AA-XXXXXXXX] issued on [MM/DD/CCYY] in your Contract State of [Contract State]**

**Decision required by the Policy Anniversary Date: [MM/DD/CCYY]**

Dear [Policyowner Name],

Massachusetts Mutual Life Insurance Company's (MassMutual's) purpose is to help people secure their future and protect the ones they love. One way in which we do this is by offering long term care insurance and ensuring that long term care insurance benefits will be available when our policyowners need them.

Your long term care insurance policy is an important component of your plans to help you maintain your financial independence and standard of living throughout your lifetime. When you purchased your policy, you made a wise decision to plan ahead so that you have options for your long term care needs if and when you may need them.

[After a careful and thorough assessment, we have made the difficult decision to increase premium rates on many of our existing long term care insurance policies. To help you understand the need for this increase, please be aware that many factors have changed over the years that have impacted the pricing of long term care insurance policies. Today, people are living longer and keeping their policies which is leading to an increase in the number of people needing and expected to use long term care services. The costs of those long term care services also continue to increase. These changes are expected to result in more people filing claims and higher claim costs. We now expect to pay higher amounts of benefits than had been originally anticipated. This anticipated increase in expected benefits has led to the need for us to increase premium rates. It is important to know that no individual or policy has been singled out due to a change in the insured's age, health, claims history, or any other individual characteristic.]

**Massachusetts Mutual Life Insurance Company**

[Long Term Care Administrative Office]

21600 Oxnard Street, Suite 1500 • Mailing Address: Post Office Box 4243

Woodland Hills, CA 91365-4243

(888) 505-0394 • Fax (818) 867-2503]



The rate increase request was reviewed by the Virginia State Corporation Commission and was found to be compliant with applicable Virginia laws and regulations addressing long term care insurance. All premium rate filings are available for public inspection and may be accessed online through the Virginia State Corporation Commission's webpage at <https://scc.virginia.gov/boi/SERFFInquiry/LtcFilings.aspx>.

As is common in the long term care insurance industry, MassMutual long term care insurance policies are guaranteed renewable. This means as long as you pay your premium, we cannot cancel or refuse to renew your policy, but we may increase premium rates. The regulatory process to implement a premium rate increase has been completed in your Contract State, and as a result, your policy is among others being impacted.

### About this increase

The following grid provides information on your current (as of the Policy Anniversary Date) long term care insurance policy and details regarding the change to your policy's premium:

Benefit Period	[Lifetime]
Daily Benefit Amount	[\$9,999.99]
Elimination Period	[90 days]
Inflation Protection	[None]
Your Old [Mode] Premium	[\$999.99]
Your New [Mode] Premium	[\$999.99]
Percentage Increase in Premium	[999.9%]
Effective Date of New Premium	[MM/DD/CCYY] (Policy Anniversary Date)

[IMPORTANT NOTICE REGARDING WAIVER OF PREMIUM: Your premium will increase on the Policy Anniversary Date of [MM/DD/CCYY] even while your policy's premium is being waived. Your current coverage will continue and your increased premium will continue to be waived. You will have the ability to reduce your coverage once your premiums are no longer waived. The Contingent Benefit Upon Lapse Option will only be available for the 120-day period as described later in this packet.]

### Understanding your options

We understand that a premium increase may be difficult, and we are committed to helping you understand your options so that you can make the best decision for your personal situation.

As part of this rate increase, you have the right to request a new [Benefit] Schedule page.

A Personalized Options Election Form and Instructions are being provided to you in this package, which outline options for reducing your coverage and the impact on your

premium. **Additionally, options may not be of equal value and some options can reduce the new premium by more than others.** We recommend you review all options available to you, including paying the increased premium, with trusted family members, your financial professional and/or a member of our Long Term Care Administrative Office to help you determine the approach that is most appropriate for your needs.

You always have the option to continue your current coverage at the new premium. However, there may be several options available to you that will reduce your policy's premium, such as:

- **Reduce the Benefit Period (BP).** Reducing the BP will reduce the maximum length of time the policy will pay benefits and the total amount of benefits payable under your policy. Any daily, weekly, monthly or annual benefit limits would continue to apply.
- **Reduce the maximum Daily Benefit Amount (DBA).** Reducing the maximum DBA will reduce the maximum amount the policy will pay for covered expenses per day and the total amount of benefits payable under your policy. This will also reduce any weekly, monthly or annual benefit amount limits available on the policy.
- **Extend the Elimination Period (EP).** Extending the EP increases the length of time you will be responsible for paying for long term care services before we will begin paying benefits.
- [
  - **Remove or reduce optional riders.** Removing or reducing an optional rider will mean you will no longer have or be eligible for the features and benefits that the rider provides. The following riders are attached to your policy:
    - [Rider Name 1]
    - [[Rider Name 2]
    - [Rider Name 3]]]

**[Removing or reducing an inflation protection rider may impact future eligibility under your Contract State's partnership program.]**

[Removing or reducing benefits and/or riders may impact any covered partner benefit.]

[You should consider the number of remaining premium payments on your policy before reducing your benefits.]

Each option should be viewed in light of your individual needs and financial situation. By reducing the policy's benefits, you reduce the coverage available to pay for future care. You may not be able to increase your benefits at a later time, even if you offer to pay the increased premium amount.

You may also wish to contact the State Health Insurance Assistance Program (SHIP) located in your state, or the State Department/Bureau of Insurance for help with





understanding your long-term care policy. Please go to [www.shiptacenter.org](http://www.shiptacenter.org) to find the nearest SHIP to you or [http://naic.org/state\\_web\\_map.htm](http://naic.org/state_web_map.htm) for information on how to contact your State Department/Bureau of Insurance.

### **Possible future changes**

It is possible that rates could increase again in the future. If they do, similar options to those listed in this letter may be available.

### **What you need to do**

- 1. If you want to keep your current coverage, simply pay your policy's new [mode] premium by the Policy Anniversary Date of [MM/DD/CCYY]. We do not need to hear from you, and you do not need to return the Personalized Options Election Form.**
- 2. If you want to change your current coverage, complete and return the enclosed Personalized Options Election Form or otherwise submit your change request in writing by the Policy Anniversary Date of [MM/DD/CCYY].**
- 3. If you decide not to continue coverage, complete and return the Personalized Options Election Form to choose the [Contingent Benefit Upon Lapse option] [Nonforfeiture Rider].**

**[Note: If we do not hear from you and you do not pay the new premium, your coverage will continue under the terms of your Nonforfeiture Rider as described in your policy for lapse due to non-payment of premium.]**

**[Note: If we do not hear from you and you do not pay the new premium, your policy will be subject to lapse due to non-payment of premium. If the policy lapses due to non-payment of premium within the 120-day period as described later in this packet in the Contingent Benefit Upon Lapse option, then the policy will be converted to a paid-up policy under the Contingent Benefit Upon Lapse option.]**

[IMPORTANT NOTE ABOUT BILLING: If we do not hear from you at least 50 days prior to the Policy Anniversary Date of [MM/DD/CCYY], your next bill will reflect the new premium based on your current coverage. However, as long as we receive your request to change coverage by the Policy Anniversary Date of [MM/DD/CCYY], we will process your request effective as of that date, notify you of the new premium due, and refund excess premium paid, if any.]

If your payment is made via a third-party account or online banking, please make appropriate arrangements to revise the payment amount.]

[IMPORTANT NOTE ABOUT PRE-AUTHORIZED CHECKING (PAC) WITHDRAWALS: As long as we receive your request to change coverage by your Policy Anniversary Date of [MM/DD/CCYY], we will process your request effective as of that date, notify you of the



premium amount for your next monthly PAC withdrawal and refund excess premium paid, if any.]

The need for care can be one of the most significant challenges a person can face, both personally and financially. We have seen the difference that long term care insurance coverage has made in the lives of our customers and their family members. Although the cost for this insurance is increasing, it provides valuable coverage that may not be available from health insurance or government programs.

We recommend that you carefully review all the options available to you (including paying the rate increase and considering any available benefit reduction options) with trusted family members, a financial professional and/or a member of our Long Term Care Administrative Office to help you determine which option may be most appropriate.

We value your business and trust, and remain committed to helping you with your long term care needs. And we are here to help you.

Sincerely,

[Executive]  
[Title]

PS: Please retain a copy of this letter with your policy for future reference.

Enclosures: Instructions, Personalized Options Election Form

cc: [Agent Name] [&] [Insured Name]

Financial Professional	Massachusetts Mutual Life Insurance Co. Long Term Care Administrative Office
[Agent Name] [Agency Name] [Agent Phone]	[MassMutual Long Term Care Administrative Office 21600 Oxnard Street, Suite 1500 PO Box 4243 Woodland Hills, CA 91365  T: (888) 505-0394 Mon. - Fri., 10 AM to 8 PM ET]

## **[Important Information about the Contingent Benefit Upon Lapse Option]**

If you decide not to pay the increased premiums associated with your long term care insurance policy, and your policy lapses within the 120 days following the Policy Anniversary Date of [MM/DD/CCYY], you may convert your policy to a paid-up status with reduced benefits and no future premiums will be due. Your policy must be paid to the Policy Anniversary Date in order for this benefit to be available.

Continuing your coverage beyond 120 days after the Policy Anniversary Date of [MM/DD/CCYY] voids the Contingent Benefit Upon Lapse option.

The following terms apply to this option:

- Electing this option will not increase your coverage, which means the total benefits paid under the policy will never exceed the maximum benefits that would be payable had the policy remained in premium paying status.
- Subject to the above, your [Total] Benefit Amount will be reduced to the greater of the total of premiums paid for the policy and riders or 30 times the Daily Benefit Amount on the date of policy lapse.
- Benefits will be paid subject to the daily/weekly/monthly/annual benefit limits in effect on the date of policy lapse.
- No further benefit increases will occur under an inflation protection rider, if attached to the policy.
- Other than as described above, your coverage is subject to the same policy benefit provisions, Elimination Period, limitations and exclusions, and all other provisions of the policy and riders that were in effect on the date of policy lapse.

[Your limited pay policy also offers an additional Contingent Benefit Upon Lapse option where both the [Total] Benefit Amount and Daily Benefit Amount are modified as shown in the Personalized Options Election Form.]

By exercising a Contingent Benefit Upon Lapse option, you may be significantly reducing your policy benefits. Therefore, careful consideration is strongly recommended. ]

[This page intentionally left blank.]

## Instructions to complete the Personalized Options Election Form

The Personalized Options Election Form in this package outlines options available to you if you would like to explore adjusting your long term care insurance policy's new premium amount by reducing or removing benefits.

- This form may not include all options available to you. **Additionally, options may not be of equal value and some options can reduce the new premium by more than others.**
- Please review this form carefully on your own, with trusted family members, your financial professional and/or a member of our Long Term Care Administrative Office to help you determine which option may be most appropriate.
- To make changes to your policy, this form must be received in our long term care administrative office no later than the Policy Anniversary Date of [MM/DD/CCYY].
- Once we've processed the change you elected, we will send you a confirmation letter along with new policy specification pages to keep with your policy.
- **All policy change requests must be received in writing.**

**Massachusetts Mutual Life Insurance Company**  
[Long Term Care Administrative Office  
21600 Oxnard Street, Suite 1500 • Mailing Address: Post Office Box 4243  
Woodland Hills, CA 91365-4243  
(888) 505-0394 • Fax (818) 867-2503]

## Personalized Options Election Form

Please return no later than the Policy Anniversary Date: [MM/DD/CCYY]

Prepared for: [Policyowner Name] [ & Joint Policyowner Name]

MassMutual Long Term Care Insurance Policy #: [AA-XXXXXXX]

**IMPORTANT: You can only choose one election on this form.** The new premium amounts shown are based on only one change taking effect on the Policy Anniversary Date of [MM/DD/CCYY].

If you wish to request a change to your policy not listed on this form, or a combination of changes, please call your financial professional or our Long Term Care Administrative Office using the contact information at the end of this form.

### Reduce the Benefit Period

[Current Benefit Period]	Available Options	New [Mode] Premium	Policy Change Election
[Lifetime]	[10 Year]	[\$99,999.99]	<input type="checkbox"/>
	[6 Year]	[\$99,999.99]	<input type="checkbox"/>
	[5 Year]	[\$99,999.99]	<input type="checkbox"/>
	[4 Year]	[\$99,999.99]	<input type="checkbox"/>
	[3 Year]	[\$99,999.99]	<input type="checkbox"/>
	[2 Year]	[\$99,999.99]	<input type="checkbox"/>

[Your policy is already at the minimum allowed in your state, therefore this option is not available to you.]

### Reduce the Daily Benefit Amount

[Current DBA as of [MM/DD/CCYY]]	Available Options	New [Mode] Premium	Policy Change Election
[\$9,999.99]	[\$9,999.99]	[\$99,999.99]	<input type="checkbox"/>
	[\$9,999.99]	[\$99,999.99]	<input type="checkbox"/>

[Your policy is already at the minimum allowed in your state, therefore this option is not available to you.]

### Extend the Elimination Period

[Current Elimination Period]	Available Options	New [Mode] Premium	Policy Change Election
[0 day]	[30 day]	[\$99,999.99]	<input type="checkbox"/>
	[60 day]	[\$99,999.99]	<input type="checkbox"/>
	[90 day]	[\$99,999.99]	<input type="checkbox"/>
	[180 day]	[\$99,999.99]	<input type="checkbox"/>

[Your policy is already at the maximum allowed in your state, therefore this option is not available to you.]

**[Non-Forfeiture Rider] [Contingent Benefit Upon Lapse option]**

<b>[Non-Forfeiture Rider][Contingent Benefit Upon Lapse option]</b>	<b>Policy Change Election</b>
<p>I want to discontinue paying premiums and convert my policy to paid-up status with reduced benefits. The [Total] Benefit Amount below is calculated based on premium and benefits paid as of [file extract date]. The Daily Benefit Amount below is as of [MM/DD/CCYY]. The actual values will be calculated based on the date of policy lapse.</p> <p>[Option 1:] The new [Total] Benefit Amount is [\$99,999.99] and the new Daily Benefit Amount is [\$9,999.99].</p> <p>[Option 2: The new [Total] Benefit Amount is [\$99,999.99] and the new Daily Benefit Amount is [\$9,999.99].]</p>	<p><input type="checkbox"/></p> <p><input type="checkbox"/></p>

**You have up until the Policy Anniversary Date of [MM/DD/CCYY] to make or modify any changes you elect on this form. [In order to elect the Contingent Benefit Upon Lapse option, your policy must be paid to the Policy Anniversary Date.]**

By signing below, I agree that any change(s) will be effective on the Policy Anniversary Date of [MM/DD/CCYY] provided this form is received at our Long Term Care Administrative Office by that date.

**Name of Policyowner:** [Policyowner Name]  
**[Name of Joint Policyowner:** [Joint Policyowner Name]]  
**Name of Insured:** [Insured Name]  
**[Name of Joint Insured:** [Joint Insured Name]]  
**Policy #:** [Policy AA-XXXXXXXX]

**Signature of Policyowner:** \_\_\_\_\_

**Signature of Joint Policyowner:** \_\_\_\_\_

**(if applicable)**

**Date:** \_\_\_\_\_

Please return this form using the enclosed postage-paid envelope.

<b>Financial Professional</b>	<b>Massachusetts Mutual Life Insurance Co. Long Term Care Administrative Office</b>
<p>[Agent Name] [Agency Name] [Agent Phone]</p>	<p>[MassMutual Long Term Care Administrative Office 21600 Oxnard Street, Suite 1500 PO Box 4243 Woodland Hills, CA 91365 T: (888) 505-0394 Mon. - Fri., 10 AM to 8 PM ET]</p>

<b>SERFF Tracking #:</b>	MILL-131569310	<b>State Tracking #:</b>	MILL-131569310	<b>Company Tracking #:</b>	MASSMUTUAL
<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company		
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified				
<b>Product Name:</b>	Long-Term Care				
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02				

## Rate Information

Rate data applies to filing.

<b>Filing Method:</b>	Review and Approval
<b>Rate Change Type:</b>	Increase
<b>Overall Percentage of Last Rate Revision:</b>	%
<b>Effective Date of Last Rate Revision:</b>	
<b>Filing Method of Last Filing:</b>	
<b>SERFF Tracking Number of Last Filing:</b>	N/A

## Company Rate Information

<b>Company Name:</b>	<b>Overall % Indicated Change:</b>	<b>Overall % Rate Impact:</b>	<b>Written Premium Change for this Program:</b>	<b>Number of Policy Holders Affected for this Program:</b>	<b>Written Premium for this Program:</b>	<b>Maximum % Change (where req'd):</b>	<b>Minimum % Change (where req'd):</b>
Massachusetts Mutual Life Insurance Company	82.000%	82.000%	\$8,683,031	4,736	\$10,560,999	100.000%	0.000%

SERFF Tracking #:

MILL-131569310

State Tracking #:

MILL-131569310

Company Tracking #:

MASSMUTUAL

State:

Virginia

Filing Company:

Massachusetts Mutual Life Insurance Company

TOI/Sub-TOI:

LTC03I Individual Long Term Care/LTC03I.001 Qualified

Product Name:

Long-Term Care

Project Name/Number:

MassMutual LTC Rate Increase Filing/145MML01-10.02

## Rate/Rule Schedule

Item No.	Schedule Item Status	Document Name	Affected Form Numbers (Separated with commas)	Rate Action	Rate Action Information	Attachments
1		Rate Tables	MM-200-P-VA, MM-200-R1, MM-200-R2, MM-200-R3, MM-200-R4, MM-200-R5-VA, MM-200-R6-VA, MM-200-R7-VA	Revised	Previous State Filing Number: 007-0000014156, 007-0000016617 Percent Rate Change Request: 95	VA_Proposed Rate Tables_200 Series_20180830.pdf,
2		Rate Tables	MM-300-P-VA, MM-300-R1, MM-300-R2, MM-300-R3, MM-300-R4, MM-300-R5-VA, MM-300-R6-VA, MM-300-R7-VA, MM-300-R8, MM-300-R11-VA, MM-300-R12, MM-300-R13	Revised	Previous State Filing Number: 007-0000020015 Percent Rate Change Request: 97	VA_Proposed Rate Tables_300 Series_20180830.pdf,
3		Rate Tables	MM-400-P-VA, MM-400-R1-VA, MM-400-R2-VA, MM-400-R3, MM-400-R4, MM-400-R5-VA, MM-400-R7, MM-400-R8, MM-400-R11-VA, MM-400-R12, MM-400-R13, MM-400-R14	Revised	Previous State Filing Number: 007-0000023278 Percent Rate Change Request: 92	VA_Proposed Rate Tables_400 Series_20180830.pdf,
4		Rate Tables	MM500-P-VA, MM501-P-VA, MM500R-EEP, MM500R-WOE, MM500R-MTH, MM500R-IND-1-VA, MM500R-COMP, MM500R-SIP, MM500R-ROB, MM500R-SBN-VA, MM500R-ROP, MM500R-FROP, MM500R-WOP, MM500R-SVR, MM500R-SCB, MME-10P, MME-P65	Revised	Previous State Filing Number: LFCR-125265510 Percent Rate Change Request: 72	VA_Proposed Rate Tables_500 Series_20180830.pdf,
5		Rate Tables	MM500-P-1-VA, MM501-P-1-VA, MM500R-EEP-1, MM500R-WOE-1, MM500R-MTH-1, MM500R-COMP-1, MM500R-ROB-1, MM500R-SBN-1-VA, MM500R-ROP-1, MM500R-FROP-1, MM500R-WOP-1, MM500R-SVR-1, MM500R-SCB-1, MME-10P-1, MMEP65-1	Revised	Previous State Filing Number: LFCR-127179493 Percent Rate Change Request: 33	VA_Proposed Rate Tables_511 Series_20180830.pdf,



**Massachusetts Mutual Life Insurance Company**

**200 Series**

**Proposed Premium Rates\***

Issue Age	Annual Base Rates		Premium Factors										HCBS Prem Wvr	
	per \$10 of Daily Benefit Amount		Lifetime Pay Inflation Protection			Limited Pay		Limited Pay Inflation Protection			Nonforfeiture			
	Facility Only	Comprehensive	None	5% Simple	5% Compound	10 Year	20 Year	None	5% Simple	5% Compound	Full	Shortened BP		
18	\$77.79	\$85.43	1.000	2.056	6.480	3.269	2.070	1.000	2.056	6.480	1.800	1.119	1.030	
19	\$77.79	\$85.43	1.000	2.056	6.446	3.269	2.070	1.000	2.056	6.446	1.800	1.119	1.030	
20	\$77.79	\$85.43	1.000	2.056	6.411	3.269	2.070	1.000	2.056	6.411	1.800	1.118	1.030	
21	\$77.79	\$85.43	1.000	2.056	6.377	3.269	2.070	1.000	2.056	6.377	1.800	1.118	1.030	
22	\$77.79	\$85.43	1.000	2.056	6.343	3.269	2.070	1.000	2.056	6.343	1.800	1.117	1.030	
23	\$77.79	\$85.43	1.000	2.056	6.302	3.269	2.070	1.000	2.056	6.302	1.800	1.116	1.030	
24	\$77.79	\$85.43	1.000	2.056	6.261	3.269	2.070	1.000	2.056	6.261	1.800	1.115	1.030	
25	\$77.79	\$85.43	1.000	2.056	6.220	3.269	2.070	1.000	2.056	6.220	1.800	1.115	1.030	
26	\$77.79	\$85.43	1.000	2.056	6.179	3.269	2.070	1.000	2.056	6.179	1.800	1.114	1.030	
27	\$77.79	\$85.43	1.000	2.056	6.138	3.269	2.070	1.000	2.056	6.138	1.800	1.113	1.030	
28	\$77.79	\$85.43	1.000	2.056	6.101	3.269	2.070	1.000	2.056	6.101	1.800	1.112	1.030	
29	\$77.79	\$85.43	1.000	2.056	6.065	3.269	2.070	1.000	2.056	6.065	1.800	1.112	1.030	
30	\$77.79	\$85.43	1.000	2.056	6.028	3.269	2.070	1.000	2.056	6.028	1.800	1.111	1.030	
31	\$77.79	\$85.43	1.000	2.056	5.992	3.269	2.070	1.000	2.056	5.992	1.800	1.111	1.030	
32	\$77.79	\$85.43	1.000	2.056	5.955	3.269	2.070	1.000	2.056	5.955	1.800	1.110	1.030	
33	\$77.79	\$85.43	1.000	2.056	5.923	3.269	2.070	1.000	2.056	5.923	1.800	1.109	1.030	
34	\$77.79	\$85.43	1.000	2.056	5.890	3.269	2.070	1.000	2.056	5.890	1.800	1.108	1.030	
35	\$77.79	\$85.43	1.000	2.056	5.858	3.269	2.070	1.000	2.056	5.858	1.800	1.107	1.030	
36	\$77.79	\$85.43	1.000	2.056	5.825	3.269	2.070	1.000	2.056	5.825	1.800	1.106	1.030	
37	\$77.79	\$85.43	1.000	2.056	5.793	3.269	2.070	1.000	2.056	5.793	1.800	1.105	1.030	
38	\$79.02	\$86.78	1.000	2.047	5.677	3.269	2.070	1.000	2.047	5.677	1.800	1.104	1.030	
39	\$80.25	\$88.13	1.000	2.038	5.561	3.269	2.070	1.000	2.038	5.561	1.800	1.103	1.030	
40	\$81.47	\$89.47	1.000	2.029	5.445	3.269	2.070	1.000	2.029	5.445	1.800	1.103	1.030	
41	\$82.70	\$90.64	1.000	2.033	5.329	3.269	2.076	1.000	2.033	5.329	1.810	1.102	1.032	
42	\$83.93	\$91.81	1.000	2.036	5.213	3.269	2.082	1.000	2.036	5.213	1.820	1.101	1.034	
43	\$86.00	\$93.89	1.000	2.044	5.106	3.221	2.057	1.000	2.044	5.106	1.830	1.101	1.036	
44	\$88.06	\$95.96	1.000	2.056	4.999	3.173	2.033	1.000	2.056	4.999	1.840	1.101	1.038	
45	\$90.12	\$98.02	1.000	2.066	4.892	3.126	2.009	1.000	2.066	4.892	1.850	1.100	1.040	
46	\$92.18	\$100.07	1.000	2.076	4.785	3.079	1.985	1.000	2.076	4.785	1.870	1.100	1.042	
47	\$94.25	\$102.12	1.000	2.085	4.678	3.033	1.962	1.000	2.085	4.678	1.890	1.100	1.044	
48	\$97.32	\$105.24	1.000	2.069	4.549	2.991	1.941	1.000	2.069	4.549	1.910	1.100	1.046	
49	\$100.39	\$108.35	1.000	2.052	4.419	2.950	1.921	1.000	2.052	4.419	1.930	1.100	1.048	
50	\$103.46	\$111.46	1.000	2.036	4.290	2.909	1.902	1.000	2.036	4.290	1.950	1.100	1.050	
51	\$106.53	\$114.55	1.000	2.049	4.160	2.869	1.882	1.000	2.049	4.160	1.970	1.100	1.052	
52	\$109.60	\$117.62	1.000	2.063	4.031	2.829	1.863	1.000	2.063	4.031	1.990	1.100	1.054	
53	\$115.15	\$123.35	1.000	2.009	3.889	2.779	1.837	1.000	2.009	3.889	2.010	1.100	1.056	
54	\$120.70	\$129.05	1.000	1.954	3.748	2.730	1.812	1.000	1.954	3.748	2.030	1.100	1.058	
55	\$126.25	\$134.73	1.000	1.903	3.606	2.684	1.789	1.000	1.903	3.606	2.050	1.100	1.060	
56	\$131.80	\$140.39	1.000	1.915	3.465	2.639	1.766	1.000	1.915	3.465	2.070	1.100	1.062	
57	\$137.36	\$146.03	1.000	1.928	3.323	2.595	1.744	1.000	1.928	3.323	2.090	1.100	1.064	
58	\$146.81	\$155.79	1.000	1.894	3.191	2.527	1.706	1.000	1.894	3.191	2.110	1.100	1.066	
59	\$156.27	\$165.52	1.000	1.855	3.058	2.463	1.671	1.000	1.855	3.058	2.130	1.100	1.068	
60	\$165.72	\$175.20	1.000	1.819	2.926	2.403	1.638	1.000	1.819	2.926	2.150	1.100	1.070	
61	\$175.18	\$184.86	1.000	1.783	2.793	2.346	1.607	1.000	1.783	2.793	2.170	1.100	1.072	
62	\$184.64	\$194.47	1.000	1.748	2.661	2.293	1.579	1.000	1.748	2.661	2.190	1.100	1.074	
63	\$202.27	\$212.64	1.000	1.710	2.585	2.205	1.526	1.000	1.710	2.585	2.210	1.100	1.076	
64	\$219.90	\$230.76	1.000	1.669	2.509	2.126	1.479	1.000	1.669	2.509	2.230	1.100	1.078	
65	\$237.53	\$248.79	1.000	1.632	2.432	2.054	1.437	1.000	1.632	2.432	2.250	1.100	1.080	
66	\$255.17	\$266.77	1.000	1.634	2.356	1.990	1.418	1.000	1.634	2.356	2.280	1.100	1.082	
67	\$272.79	\$284.67	1.000	1.634	2.280	1.931	1.402	1.000	1.634	2.280	2.310	1.100	1.084	
68	\$309.44	\$322.32	1.000	1.599	2.207	1.852	1.371	1.000	1.599	2.207	2.340	1.100	1.086	
69	\$346.08	\$359.82	1.000	1.565	2.134	1.784	1.347	1.000	1.565	2.134	2.370	1.100	1.088	
70	\$382.71	\$397.18	1.000	1.531	2.060	1.725	1.330	1.000	1.531	2.060	2.400	1.100	1.090	
71	\$419.35	\$434.41	1.000	1.518	1.987	1.674	1.319	1.000	1.518	1.987	2.430	1.100	1.092	
72	\$455.99	\$471.50	1.000	1.504	1.914	1.629	1.313	1.000	1.504	1.914	2.460	1.100	1.094	
73	\$518.02	\$534.67	1.000	1.510	1.882	1.581	1.304	1.000	1.510	1.882	2.490	1.100	1.096	
74	\$580.05	\$597.59	1.000	1.514	1.850	1.542	1.303	1.000	1.514	1.850	2.520	1.100	1.098	
75	\$642.08	\$660.30	1.000	1.520	1.818	1.509	1.307	1.000	1.520	1.818	2.550	1.100	1.100	
76	\$704.10	\$722.76	1.000	1.474	1.786	1.482	1.291	1.000	1.474	1.786	2.580	1.100	1.102	
77	\$766.13	\$785.01	1.000	1.430	1.754	1.458	1.278	1.000	1.430	1.754	2.610	1.100	1.104	
78	\$864.83	\$884.55	1.000	1.430	1.739	1.414	1.247	1.000	1.430	1.739	2.640	1.100	1.106	
79	\$963.54	\$983.73	1.000	1.429	1.724	1.378	1.222	1.000	1.429	1.724	2.670	1.100	1.108	
80	\$1,062.26	\$1,082.56	1.000	1.430	1.710	1.348	1.203	1.000	1.430	1.710	2.700	1.100	1.110	
81	\$1,160.97	\$1,181.03	1.000	1.406	1.695	1.323	1.188	1.000	1.406	1.695	2.730	1.100	1.112	
82	\$1,259.67	\$1,279.14	1.000	1.382	1.680	1.302	1.177	1.000	1.382	1.680	2.760	1.100	1.114	
83	\$1,372.36	\$1,391.07	1.000	1.349	1.642	1.284	1.169	1.000	1.349	1.642	2.790	1.100	1.116	
84	\$1,485.05	\$1,502.61	1.000	1.315	1.603	1.268	1.162	1.000	1.315	1.603	2.820	1.100	1.118	

\* Consistent with 513 Series new business rates prior to any caps. The actual rates implemented will be capped on a seriatim basis such that no insured receives more than a 100% increase or a rate decrease.

Multi-Life Discounts		Factor
Employer or Association Iss Age < 65		0.900
Employer or Association Iss Age >= 65		0.900
Home Office and Career Agents Iss Age < 65		0.900
Home Office and Career Agents Iss Age >= 65		0.900
Individual Underwriting Classes		Factor
Ultra Preferred		0.900
Preferred		1.000
Standard		1.250
Joint Policy Factor		1.300
Joint Risk Class		Factor
2 Ultra Preferred		0.900
1 Ultra Preferred and 1 Preferred		0.950
1 Ultra Preferred and 1 Standard		1.075
2 Preferred		1.000
1 Preferred and 1 Standard		1.125
2 Standard		1.250
Benefit Type		Factor
Daily Reimbursement		1.000
Home and Community Based Services (HCBS)		1.125
Enhancement Rider		
Indemnity Rider		1.370
Caregiver Indemnity Rider		2.382
Elimination Period		Factor
0 Day		1.300
30 Day		1.200
60 Day		1.100
90 Day		1.044
180 Day		0.900
Benefit Period		Factor
3 Year		0.547
4 Year		N/A
5 Year		N/A
6 Year		0.714
10 Year		N/A
Lifetime		1.066
Payment Mode		Factor
Annual		1.000
Semi-Annual		0.520
Quarterly		0.270
Monthly - Pre-Authorized Check		0.085
Discounted Renewal Premium Factor		0.750

**Massachusetts Mutual Life Insurance Company**  
**200 Series with 2001 Revised Rates**  
**Proposed Premium Rates\***

Issue Age	Annual Base Rates		Premium Factors										Multi-Life Discounts		Factor
	per \$10 of Daily Benefit Amount		Lifetime Pay Inflation Protection			Limited Pay		Limited Pay Inflation Protection			Nonforfeiture		HCBS Prem Vvvr		
	Facility Only	Comprehensive	None	5% Simple	5% Compound	10 Year	20 Year	None	5% Simple	5% Compound	Full	Shortened BP			
18	\$77.79	\$85.43	1.000	2.056	6.480	3.269	2.070	1.000	2.056	6.480	1.800	1.119	1.030	Employer or Association Iss Age < 65	0.900
19	\$77.79	\$85.43	1.000	2.056	6.446	3.269	2.070	1.000	2.056	6.446	1.800	1.119	1.030	Employer or Association Iss Age >= 65	0.900
20	\$77.79	\$85.43	1.000	2.056	6.411	3.269	2.070	1.000	2.056	6.411	1.800	1.118	1.030	Home Office and Career Agents Iss Age < 65	0.900
21	\$77.79	\$85.43	1.000	2.056	6.377	3.269	2.070	1.000	2.056	6.377	1.800	1.118	1.030	Home Office and Career Agents Iss Age >= 65	0.900
22	\$77.79	\$85.43	1.000	2.056	6.343	3.269	2.070	1.000	2.056	6.343	1.800	1.117	1.030		
23	\$77.79	\$85.43	1.000	2.056	6.302	3.269	2.070	1.000	2.056	6.302	1.800	1.116	1.030		
24	\$77.79	\$85.43	1.000	2.056	6.261	3.269	2.070	1.000	2.056	6.261	1.800	1.115	1.030		
25	\$77.79	\$85.43	1.000	2.056	6.220	3.269	2.070	1.000	2.056	6.220	1.800	1.115	1.030		
26	\$77.79	\$85.43	1.000	2.056	6.179	3.269	2.070	1.000	2.056	6.179	1.800	1.114	1.030		
27	\$77.79	\$85.43	1.000	2.056	6.138	3.269	2.070	1.000	2.056	6.138	1.800	1.113	1.030		
28	\$77.79	\$85.43	1.000	2.056	6.101	3.269	2.070	1.000	2.056	6.101	1.800	1.112	1.030		
29	\$77.79	\$85.43	1.000	2.056	6.065	3.269	2.070	1.000	2.056	6.065	1.800	1.112	1.030		
30	\$77.79	\$85.43	1.000	2.056	6.028	3.269	2.070	1.000	2.056	6.028	1.800	1.111	1.030		
31	\$77.79	\$85.43	1.000	2.056	5.992	3.269	2.070	1.000	2.056	5.992	1.800	1.111	1.030		
32	\$77.79	\$85.43	1.000	2.056	5.955	3.269	2.070	1.000	2.056	5.955	1.800	1.110	1.030		
33	\$77.79	\$85.43	1.000	2.056	5.923	3.269	2.070	1.000	2.056	5.923	1.800	1.109	1.030		
34	\$77.79	\$85.43	1.000	2.056	5.890	3.269	2.070	1.000	2.056	5.890	1.800	1.108	1.030		
35	\$77.79	\$85.43	1.000	2.056	5.858	3.269	2.070	1.000	2.056	5.858	1.800	1.107	1.030		
36	\$77.79	\$85.43	1.000	2.056	5.825	3.269	2.070	1.000	2.056	5.825	1.800	1.106	1.030		
37	\$77.79	\$85.43	1.000	2.056	5.793	3.269	2.070	1.000	2.056	5.793	1.800	1.105	1.030		
38	\$79.02	\$86.78	1.000	2.047	5.677	3.269	2.070	1.000	2.047	5.677	1.800	1.104	1.030		
39	\$80.25	\$88.13	1.000	2.038	5.561	3.269	2.070	1.000	2.038	5.561	1.800	1.103	1.030		
40	\$81.47	\$89.47	1.000	2.029	5.445	3.269	2.070	1.000	2.029	5.445	1.800	1.103	1.030		
41	\$82.70	\$90.64	1.000	2.033	5.329	3.269	2.076	1.000	2.033	5.329	1.810	1.102	1.032		
42	\$83.93	\$91.81	1.000	2.036	5.213	3.269	2.082	1.000	2.036	5.213	1.820	1.101	1.034		
43	\$86.00	\$93.89	1.000	2.044	5.106	3.221	2.057	1.000	2.044	5.106	1.830	1.101	1.036		
44	\$88.06	\$95.96	1.000	2.056	4.999	3.173	2.033	1.000	2.056	4.999	1.840	1.101	1.038		
45	\$90.12	\$98.02	1.000	2.066	4.892	3.120	2.009	1.000	2.066	4.892	1.850	1.100	1.040		
46	\$92.18	\$100.07	1.000	2.076	4.785	3.079	1.985	1.000	2.076	4.785	1.870	1.100	1.042		
47	\$94.25	\$102.12	1.000	2.085	4.678	3.033	1.962	1.000	2.085	4.678	1.890	1.100	1.044		
48	\$97.32	\$105.24	1.000	2.069	4.549	2.991	1.941	1.000	2.069	4.549	1.910	1.100	1.046		
49	\$100.39	\$108.35	1.000	2.052	4.419	2.950	1.921	1.000	2.052	4.419	1.930	1.100	1.048		
50	\$103.46	\$111.46	1.000	2.036	4.290	2.909	1.902	1.000	2.036	4.290	1.950	1.100	1.050		
51	\$106.53	\$114.55	1.000	2.049	4.160	2.869	1.882	1.000	2.049	4.160	1.970	1.100	1.052		
52	\$109.60	\$117.62	1.000	2.063	4.031	2.829	1.863	1.000	2.063	4.031	1.990	1.100	1.054		
53	\$115.15	\$123.35	1.000	2.009	3.889	2.779	1.837	1.000	2.009	3.889	2.010	1.100	1.056		
54	\$120.70	\$129.05	1.000	1.954	3.748	2.730	1.812	1.000	1.954	3.748	2.030	1.100	1.058		
55	\$126.25	\$134.73	1.000	1.903	3.606	2.684	1.789	1.000	1.903	3.606	2.050	1.100	1.060		
56	\$131.80	\$140.39	1.000	1.915	3.465	2.639	1.766	1.000	1.915	3.465	2.070	1.100	1.062		
57	\$137.36	\$146.03	1.000	1.928	3.323	2.595	1.744	1.000	1.928	3.323	2.090	1.100	1.064		
58	\$146.81	\$155.79	1.000	1.894	3.191	2.527	1.706	1.000	1.894	3.191	2.110	1.100	1.066		
59	\$156.27	\$165.52	1.000	1.855	3.058	2.463	1.671	1.000	1.855	3.058	2.130	1.100	1.068		
60	\$165.72	\$175.20	1.000	1.819	2.926	2.403	1.638	1.000	1.819	2.926	2.150	1.100	1.070		
61	\$175.18	\$184.86	1.000	1.783	2.793	2.346	1.607	1.000	1.783	2.793	2.170	1.100	1.072		
62	\$184.64	\$194.47	1.000	1.748	2.661	2.293	1.579	1.000	1.748	2.661	2.190	1.100	1.074		
63	\$202.27	\$212.64	1.000	1.710	2.585	2.205	1.526	1.000	1.710	2.585	2.210	1.100	1.076		
64	\$219.90	\$230.76	1.000	1.669	2.509	2.126	1.479	1.000	1.669	2.509	2.230	1.100	1.078		
65	\$237.53	\$248.79	1.000	1.632	2.432	2.054	1.437	1.000	1.632	2.432	2.250	1.100	1.080		
66	\$255.17	\$266.77	1.000	1.634	2.356	1.990	1.418	1.000	1.634	2.356	2.280	1.100	1.082		
67	\$272.79	\$284.67	1.000	1.634	2.280	1.931	1.402	1.000	1.634	2.280	2.310	1.100	1.084		
68	\$309.44	\$322.32	1.000	1.599	2.207	1.852	1.371	1.000	1.599	2.207	2.340	1.100	1.086		
69	\$346.08	\$359.82	1.000	1.565	2.134	1.784	1.347	1.000	1.565	2.134	2.370	1.100	1.088		
70	\$382.71	\$397.18	1.000	1.531	2.060	1.725	1.330	1.000	1.531	2.060	2.400	1.100	1.090		
71	\$419.35	\$434.41	1.000	1.518	1.987	1.674	1.319	1.000	1.518	1.987	2.430	1.100	1.092		
72	\$455.99	\$471.50	1.000	1.504	1.914	1.629	1.313	1.000	1.504	1.914	2.460	1.100	1.094		
73	\$518.02	\$534.67	1.000	1.510	1.882	1.581	1.304	1.000	1.510	1.882	2.490	1.100	1.096		
74	\$580.05	\$597.59	1.000	1.514	1.850	1.542	1.303	1.000	1.514	1.850	2.520	1.100	1.098		
75	\$642.08	\$660.30	1.000	1.520	1.818	1.509	1.307	1.000	1.520	1.818	2.550	1.100	1.100		
76	\$704.10	\$722.76	1.000	1.474	1.786	1.482	1.291	1.000	1.474	1.786	2.580	1.100	1.102		
77	\$766.13	\$785.01	1.000	1.430	1.754	1.458	1.278	1.000	1.430	1.754	2.610	1.100	1.104		
78	\$864.83	\$884.55	1.000	1.430	1.739	1.414	1.247	1.000	1.430	1.739	2.640	1.100	1.106		
79	\$963.54	\$983.73	1.000	1.429	1.724	1.378	1.222	1.000	1.429	1.724	2.670	1.100	1.108		
80	\$1,062.26	\$1,082.56	1.000	1.430	1.710	1.348	1.203	1.000	1.430	1.710	2.700	1.100	1.110		
81	\$1,160.97	\$1,181.03	1.000	1.406	1.695	1.323	1.188	1.000	1.406	1.695	2.730	1.100	1.112		
82	\$1,259.67	\$1,279.14	1.000	1.382	1.680	1.302	1.177	1.000	1.382	1.680	2.760	1.100	1.114		
83	\$1,372.36	\$1,391.07	1.000	1.349	1.642	1.284	1.169	1.000	1.349	1.642	2.790	1.100	1.116		
84	\$1,485.05	\$1,502.61	1.000	1.315	1.603	1.268	1.162	1.000	1.315	1.603	2.820	1.100	1.118		

\* Consistent with 513 Series new business rates prior to any caps. The actual rates implemented will be capped on a seriatim basis such that no insured receives more than a 100% increase or a rate decrease.

**Massachusetts Mutual Life Insurance Company**

**300 Series**

**Proposed Premium Rates\***

Issue Age	Annual Base Rates		Premium Factors											Paid-Up Survivor	
	per \$10 of Daily Benefit Amount		Lifetime Pay Inflation Protection			Limited Pay		Limited Pay Inflation Protection			Nonforfeiture		HCBS Prem Wvr		
	Facility Only	Comprehensive	None	5% Simple	5% Compound	10 Year	20 Year	None	5% Simple	5% Compound	Full	Shortened BP			
18	\$77.79	\$85.43	1.000	2.056	6.480	3.269	2.070	1.000	2.056	6.480	1.800	1.119	1.030	1.065	
19	\$77.79	\$85.43	1.000	2.056	6.446	3.269	2.070	1.000	2.056	6.446	1.800	1.119	1.030	1.065	
20	\$77.79	\$85.43	1.000	2.056	6.411	3.269	2.070	1.000	2.056	6.411	1.800	1.118	1.030	1.065	
21	\$77.79	\$85.43	1.000	2.056	6.377	3.269	2.070	1.000	2.056	6.377	1.800	1.118	1.030	1.065	
22	\$77.79	\$85.43	1.000	2.056	6.343	3.269	2.070	1.000	2.056	6.343	1.800	1.117	1.030	1.065	
23	\$77.79	\$85.43	1.000	2.056	6.302	3.269	2.070	1.000	2.056	6.302	1.800	1.116	1.030	1.065	
24	\$77.79	\$85.43	1.000	2.056	6.261	3.269	2.070	1.000	2.056	6.261	1.800	1.115	1.030	1.065	
25	\$77.79	\$85.43	1.000	2.056	6.220	3.269	2.070	1.000	2.056	6.220	1.800	1.115	1.030	1.065	
26	\$77.79	\$85.43	1.000	2.056	6.179	3.269	2.070	1.000	2.056	6.179	1.800	1.114	1.030	1.065	
27	\$77.79	\$85.43	1.000	2.056	6.138	3.269	2.070	1.000	2.056	6.138	1.800	1.113	1.030	1.065	
28	\$77.79	\$85.43	1.000	2.056	6.101	3.269	2.070	1.000	2.056	6.101	1.800	1.112	1.030	1.065	
29	\$77.79	\$85.43	1.000	2.056	6.065	3.269	2.070	1.000	2.056	6.065	1.800	1.112	1.030	1.065	
30	\$77.79	\$85.43	1.000	2.056	6.028	3.269	2.070	1.000	2.056	6.028	1.800	1.111	1.030	1.065	
31	\$77.79	\$85.43	1.000	2.056	5.992	3.269	2.070	1.000	2.056	5.992	1.800	1.111	1.030	1.065	
32	\$77.79	\$85.43	1.000	2.056	5.955	3.269	2.070	1.000	2.056	5.955	1.800	1.110	1.030	1.065	
33	\$77.79	\$85.43	1.000	2.056	5.923	3.269	2.070	1.000	2.056	5.923	1.800	1.109	1.030	1.065	
34	\$77.79	\$85.43	1.000	2.056	5.890	3.269	2.070	1.000	2.056	5.890	1.800	1.108	1.030	1.065	
35	\$77.79	\$85.43	1.000	2.056	5.858	3.269	2.070	1.000	2.056	5.858	1.800	1.107	1.030	1.065	
36	\$77.79	\$85.43	1.000	2.056	5.825	3.269	2.070	1.000	2.056	5.825	1.800	1.106	1.030	1.065	
37	\$77.79	\$85.43	1.000	2.056	5.793	3.269	2.070	1.000	2.056	5.793	1.800	1.105	1.030	1.065	
38	\$79.02	\$86.78	1.000	2.047	5.677	3.269	2.070	1.000	2.047	5.677	1.800	1.104	1.030	1.066	
39	\$80.25	\$88.13	1.000	2.038	5.561	3.269	2.070	1.000	2.038	5.561	1.800	1.103	1.030	1.067	
40	\$81.47	\$89.47	1.000	2.029	5.445	3.269	2.070	1.000	2.029	5.445	1.800	1.103	1.030	1.068	
41	\$82.70	\$90.64	1.000	2.033	5.329	3.269	2.076	1.000	2.033	5.329	1.810	1.102	1.032	1.069	
42	\$83.93	\$91.81	1.000	2.036	5.213	3.269	2.082	1.000	2.036	5.213	1.820	1.101	1.034	1.070	
43	\$86.00	\$93.89	1.000	2.044	5.106	3.221	2.057	1.000	2.044	5.106	1.830	1.101	1.036	1.072	
44	\$88.06	\$95.96	1.000	2.056	4.999	3.173	2.033	1.000	2.056	4.999	1.840	1.101	1.038	1.074	
45	\$90.12	\$98.02	1.000	2.066	4.892	3.126	2.009	1.000	2.066	4.892	1.850	1.100	1.040	1.076	
46	\$92.18	\$100.07	1.000	2.076	4.785	3.079	1.985	1.000	2.076	4.785	1.870	1.100	1.042	1.078	
47	\$94.25	\$102.12	1.000	2.085	4.678	3.033	1.962	1.000	2.085	4.678	1.890	1.100	1.044	1.080	
48	\$97.32	\$105.24	1.000	2.069	4.549	2.991	1.941	1.000	2.069	4.549	1.910	1.100	1.046	1.084	
49	\$100.39	\$108.35	1.000	2.052	4.419	2.950	1.921	1.000	2.052	4.419	1.930	1.100	1.048	1.088	
50	\$103.46	\$111.46	1.000	2.036	4.290	2.909	1.902	1.000	2.036	4.290	1.950	1.100	1.050	1.092	
51	\$106.53	\$114.55	1.000	2.049	4.160	2.869	1.882	1.000	2.049	4.160	1.970	1.100	1.052	1.096	
52	\$109.60	\$117.62	1.000	2.063	4.031	2.829	1.863	1.000	2.063	4.031	1.990	1.100	1.054	1.100	
53	\$115.15	\$123.35	1.000	2.009	3.889	2.779	1.837	1.000	2.009	3.889	2.010	1.100	1.056	1.104	
54	\$120.70	\$129.05	1.000	1.954	3.748	2.730	1.812	1.000	1.954	3.748	2.030	1.100	1.058	1.108	
55	\$126.25	\$134.73	1.000	1.903	3.606	2.684	1.789	1.000	1.903	3.606	2.050	1.100	1.060	1.112	
56	\$131.80	\$140.39	1.000	1.915	3.465	2.639	1.766	1.000	1.915	3.465	2.070	1.100	1.062	1.116	
57	\$137.36	\$146.03	1.000	1.928	3.323	2.595	1.744	1.000	1.928	3.323	2.090	1.100	1.064	1.120	
58	\$146.81	\$155.79	1.000	1.894	3.191	2.527	1.706	1.000	1.894	3.191	2.110	1.100	1.066	1.124	
59	\$156.27	\$165.52	1.000	1.855	3.058	2.463	1.671	1.000	1.855	3.058	2.130	1.100	1.068	1.128	
60	\$165.72	\$175.20	1.000	1.819	2.926	2.403	1.638	1.000	1.819	2.926	2.150	1.100	1.070	1.132	
61	\$175.18	\$184.86	1.000	1.783	2.793	2.346	1.607	1.000	1.783	2.793	2.170	1.100	1.072	1.136	
62	\$184.64	\$194.47	1.000	1.748	2.661	2.293	1.579	1.000	1.748	2.661	2.190	1.100	1.074	1.140	
63	\$202.27	\$212.64	1.000	1.710	2.585	2.205	1.526	1.000	1.710	2.585	2.210	1.100	1.076	1.142	
64	\$219.90	\$230.76	1.000	1.669	2.509	2.126	1.479	1.000	1.669	2.509	2.230	1.100	1.078	1.144	
65	\$237.53	\$248.79	1.000	1.632	2.432	2.054	1.437	1.000	1.632	2.432	2.250	1.100	1.080	1.146	
66	\$255.17	\$266.77	1.000	1.634	2.356	1.990	1.418	1.000	1.634	2.356	2.280	1.100	1.082	1.148	
67	\$272.79	\$284.67	1.000	1.634	2.280	1.931	1.402	1.000	1.634	2.280	2.310	1.100	1.084	1.150	
68	\$309.44	\$322.32	1.000	1.599	2.207	1.852	1.371	1.000	1.599	2.207	2.340	1.100	1.086	1.150	
69	\$346.08	\$359.82	1.000	1.565	2.134	1.784	1.347	1.000	1.565	2.134	2.370	1.100	1.088	1.150	
70	\$382.71	\$397.18	1.000	1.531	2.060	1.725	1.330	1.000	1.531	2.060	2.400	1.100	1.090	1.150	
71	\$419.35	\$434.41	1.000	1.518	1.987	1.674	1.319	1.000	1.518	1.987	2.430	1.100	1.092	1.150	
72	\$455.99	\$471.50	1.000	1.504	1.914	1.629	1.313	1.000	1.504	1.914	2.460	1.100	1.094	1.150	
73	\$518.02	\$534.67	1.000	1.510	1.882	1.581	1.304	1.000	1.510	1.882	2.490	1.100	1.096	1.150	
74	\$580.05	\$597.59	1.000	1.514	1.850	1.542	1.303	1.000	1.514	1.850	2.520	1.100	1.098	1.150	
75	\$642.08	\$660.30	1.000	1.520	1.818	1.509	1.307	1.000	1.520	1.818	2.550	1.100	1.100	1.150	
76	\$704.10	\$722.76	1.000	1.474	1.786	1.482	1.291	1.000	1.474	1.786	2.580	1.100	1.102	1.150	
77	\$766.13	\$785.01	1.000	1.430	1.754	1.458	1.278	1.000	1.430	1.754	2.610	1.100	1.104	1.150	
78	\$864.83	\$884.55	1.000	1.430	1.739	1.414	1.247	1.000	1.430	1.739	2.640	1.100	1.106	1.150	
79	\$963.54	\$983.73	1.000	1.429	1.724	1.378	1.222	1.000	1.429	1.724	2.670	1.100	1.108	1.150	
80	\$1,062.26	\$1,082.56	1.000	1.430	1.710	1.348	1.203	1.000	1.430	1.710	2.700	1.100	1.110	1.150	
81	\$1,160.97	\$1,181.03	1.000	1.406	1.695	1.323	1.188	1.000	1.406	1.695	2.730	1.100	1.112	1.150	
82	\$1,259.67	\$1,279.14	1.000	1.382	1.680	1.302	1.177	1.000	1.382	1.680	2.760	1.100	1.114	1.150	
83	\$1,372.36	\$1,391.07	1.000	1.349	1.642	1.284	1.169	1.000	1.349	1.642	2.790	1.100	1.116	1.150	
84	\$1,485.05	\$1,502.61	1.000	1.315	1.603	1.268	1.162	1.000	1.315	1.603	2.820	1.100	1.118	1.150	

Discounts	Factor
Multi-Life	0.900

Individual Underwriting Classes	Factor
Ultra Preferred	0.900
Preferred	1.000
Standard	1.250

Joint Policy Factor	1.300
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Joint Risk Class	Factor
2 Ultra Preferred	0.900
1 Ultra Preferred and 1 Preferred	0.950
1 Ultra Preferred and 1 Standard	1.075
2 Preferred	1.000
1 Preferred and 1 Standard	1.125
2 Standard	1.250

Benefit Type	Factor
Daily Reimbursement	1.000
Home and Community Based Services (HCBS) Enhancement Rider	1.125
Indemnity Rider	1.370
Caregiver Indemnity Rider	2.382

Elimination Period	Factor
0 Day	1.300
30 Day	1.200
60 Day	1.100
90 Day	1.000
180 Day	0.900

Benefit Period	Premium Factor	Rider	
		Restoration of Benefits	Limited Family Care Giver
3 Year	0.547	1.040	1.200
4 Year	0.613	1.040	1.150
5 Year	N/A	N/A	N/A
6 Year	0.714	1.040	1.100
10 Year	N/A	N/A	N/A
Lifetime	1.066	1.010	1.100

Payment Mode	Factor
Annual	1.000
Semi-Annual	0.520
Quarterly	0.270
Monthly - Pre-Authorized Check	0.085
Monthly - Credit Card	0.095

Discounted Renewal Premium Factor	0.750
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**Massachusetts Mutual Life Insurance Company**

**400 Series**

**Proposed Premium Rates\***

Issue Age	Annual Base Rates**			Premium Factors										
	per \$10 of Daily Benefit Amount			Lifetime Pay Inflation Protection			Limited Pay		Limited Pay Inflation Protection			Nonforfeiture		Paid-Up Survivor
	Facility Only	Comprehensive	None	5% Simple	5% Compound	10 Year	20 Year	None	5% Simple	5% Compound	Full	Shortened BP	Prem Wvr	
18	\$82.45	\$90.56	1.000	2.056	6.480	3.269	2.070	1.000	2.056	6.480	1.800	1.119	1.030	1.065
19	\$82.45	\$90.56	1.000	2.056	6.446	3.269	2.070	1.000	2.056	6.446	1.800	1.119	1.030	1.065
20	\$82.45	\$90.56	1.000	2.056	6.411	3.269	2.070	1.000	2.056	6.411	1.800	1.118	1.030	1.065
21	\$82.45	\$90.56	1.000	2.056	6.377	3.269	2.070	1.000	2.056	6.377	1.800	1.118	1.030	1.065
22	\$82.45	\$90.56	1.000	2.056	6.343	3.269	2.070	1.000	2.056	6.343	1.800	1.117	1.030	1.065
23	\$82.45	\$90.56	1.000	2.056	6.302	3.269	2.070	1.000	2.056	6.302	1.800	1.116	1.030	1.065
24	\$82.45	\$90.56	1.000	2.056	6.261	3.269	2.070	1.000	2.056	6.261	1.800	1.115	1.030	1.065
25	\$82.45	\$90.56	1.000	2.056	6.220	3.269	2.070	1.000	2.056	6.220	1.800	1.115	1.030	1.065
26	\$82.45	\$90.56	1.000	2.056	6.179	3.269	2.070	1.000	2.056	6.179	1.800	1.114	1.030	1.065
27	\$82.45	\$90.56	1.000	2.056	6.138	3.269	2.070	1.000	2.056	6.138	1.800	1.113	1.030	1.065
28	\$82.45	\$90.56	1.000	2.056	6.101	3.269	2.070	1.000	2.056	6.101	1.800	1.112	1.030	1.065
29	\$82.45	\$90.56	1.000	2.056	6.065	3.269	2.070	1.000	2.056	6.065	1.800	1.112	1.030	1.065
30	\$82.45	\$90.56	1.000	2.056	6.028	3.269	2.070	1.000	2.056	6.028	1.800	1.111	1.030	1.065
31	\$82.45	\$90.56	1.000	2.056	5.992	3.269	2.070	1.000	2.056	5.992	1.800	1.111	1.030	1.065
32	\$82.45	\$90.56	1.000	2.056	5.955	3.269	2.070	1.000	2.056	5.955	1.800	1.110	1.030	1.065
33	\$82.45	\$90.56	1.000	2.056	5.923	3.269	2.070	1.000	2.056	5.923	1.800	1.109	1.030	1.065
34	\$82.45	\$90.56	1.000	2.056	5.890	3.269	2.070	1.000	2.056	5.890	1.800	1.108	1.030	1.065
35	\$82.45	\$90.56	1.000	2.056	5.858	3.269	2.070	1.000	2.056	5.858	1.800	1.107	1.030	1.065
36	\$82.45	\$90.56	1.000	2.056	5.825	3.269	2.070	1.000	2.056	5.825	1.800	1.106	1.030	1.065
37	\$82.45	\$90.56	1.000	2.056	5.793	3.269	2.070	1.000	2.056	5.793	1.800	1.105	1.030	1.065
38	\$83.76	\$91.99	1.000	2.047	5.677	3.269	2.070	1.000	2.047	5.677	1.800	1.104	1.030	1.066
39	\$85.06	\$93.42	1.000	2.038	5.561	3.269	2.070	1.000	2.038	5.561	1.800	1.103	1.030	1.067
40	\$86.35	\$94.84	1.000	2.029	5.445	3.269	2.070	1.000	2.029	5.445	1.800	1.103	1.030	1.068
41	\$87.66	\$96.08	1.000	2.033	5.329	3.269	2.076	1.000	2.033	5.329	1.810	1.102	1.032	1.069
42	\$88.96	\$97.32	1.000	2.036	5.213	3.269	2.082	1.000	2.036	5.213	1.820	1.101	1.034	1.070
43	\$91.16	\$99.53	1.000	2.044	5.106	3.221	2.057	1.000	2.044	5.106	1.830	1.101	1.036	1.072
44	\$93.34	\$101.72	1.000	2.056	4.999	3.173	2.033	1.000	2.056	4.999	1.840	1.101	1.038	1.074
45	\$95.52	\$103.91	1.000	2.066	4.892	3.126	2.009	1.000	2.066	4.892	1.850	1.100	1.040	1.076
46	\$97.71	\$106.08	1.000	2.076	4.785	3.079	1.985	1.000	2.076	4.785	1.870	1.100	1.042	1.078
47	\$99.90	\$108.25	1.000	2.085	4.678	3.033	1.962	1.000	2.085	4.678	1.890	1.100	1.044	1.080
48	\$103.15	\$111.56	1.000	2.069	4.549	2.991	1.941	1.000	2.069	4.549	1.910	1.100	1.046	1.084
49	\$106.41	\$114.86	1.000	2.052	4.419	2.950	1.921	1.000	2.052	4.419	1.930	1.100	1.048	1.088
50	\$109.66	\$118.15	1.000	2.036	4.290	2.909	1.902	1.000	2.036	4.290	1.950	1.100	1.050	1.092
51	\$112.92	\$121.42	1.000	2.049	4.160	2.869	1.882	1.000	2.049	4.160	1.970	1.100	1.052	1.096
52	\$116.17	\$124.68	1.000	2.063	4.031	2.829	1.863	1.000	2.063	4.031	1.990	1.100	1.054	1.100
53	\$122.05	\$130.75	1.000	2.009	3.889	2.779	1.837	1.000	2.009	3.889	2.010	1.100	1.056	1.104
54	\$127.94	\$136.79	1.000	1.954	3.748	2.730	1.812	1.000	1.954	3.748	2.030	1.100	1.058	1.108
55	\$133.82	\$142.82	1.000	1.903	3.606	2.684	1.789	1.000	1.903	3.606	2.050	1.100	1.060	1.112
56	\$139.70	\$148.81	1.000	1.915	3.465	2.639	1.766	1.000	1.915	3.465	2.070	1.100	1.062	1.116
57	\$145.60	\$154.79	1.000	1.928	3.323	2.595	1.744	1.000	1.928	3.323	2.090	1.100	1.064	1.120
58	\$155.61	\$165.14	1.000	1.894	3.191	2.527	1.706	1.000	1.894	3.191	2.110	1.100	1.066	1.124
59	\$165.64	\$175.45	1.000	1.855	3.058	2.463	1.671	1.000	1.855	3.058	2.130	1.100	1.068	1.128
60	\$175.66	\$185.71	1.000	1.819	2.926	2.403	1.638	1.000	1.819	2.926	2.150	1.100	1.070	1.132
61	\$185.69	\$195.95	1.000	1.783	2.793	2.346	1.607	1.000	1.783	2.793	2.170	1.100	1.072	1.136
62	\$195.71	\$206.14	1.000	1.748	2.661	2.293	1.579	1.000	1.748	2.661	2.190	1.100	1.074	1.140
63	\$214.40	\$225.40	1.000	1.710	2.585	2.205	1.526	1.000	1.710	2.585	2.210	1.100	1.076	1.142
64	\$233.09	\$244.60	1.000	1.669	2.509	2.126	1.479	1.000	1.669	2.509	2.230	1.100	1.078	1.144
65	\$251.78	\$263.72	1.000	1.632	2.432	2.054	1.437	1.000	1.632	2.432	2.250	1.100	1.080	1.146
66	\$270.48	\$282.78	1.000	1.634	2.356	1.990	1.418	1.000	1.634	2.356	2.280	1.100	1.082	1.148
67	\$289.15	\$301.75	1.000	1.634	2.280	1.931	1.402	1.000	1.634	2.280	2.310	1.100	1.084	1.150
68	\$328.00	\$341.65	1.000	1.599	2.207	1.852	1.371	1.000	1.599	2.207	2.340	1.100	1.086	1.150
69	\$366.84	\$381.41	1.000	1.565	2.134	1.784	1.347	1.000	1.565	2.134	2.370	1.100	1.088	1.150
70	\$405.67	\$421.01	1.000	1.531	2.060	1.725	1.330	1.000	1.531	2.060	2.400	1.100	1.090	1.150
71	\$444.51	\$460.47	1.000	1.518	1.987	1.674	1.319	1.000	1.518	1.987	2.430	1.100	1.092	1.150
72	\$483.34	\$499.79	1.000	1.504	1.914	1.629	1.313	1.000	1.504	1.914	2.460	1.100	1.094	1.150
73	\$549.10	\$566.75	1.000	1.510	1.882	1.581	1.304	1.000	1.510	1.882	2.490	1.100	1.096	1.150
74	\$614.85	\$633.45	1.000	1.514	1.850	1.542	1.303	1.000	1.514	1.850	2.520	1.100	1.098	1.150
75	\$680.60	\$699.91	1.000	1.520	1.818	1.509	1.307	1.000	1.520	1.818	2.550	1.100	1.100	1.150
76	\$746.34	\$766.13	1.000	1.474	1.786	1.482	1.291	1.000	1.474	1.786	2.580	1.100	1.102	1.150
77	\$812.09	\$832.11	1.000	1.430	1.754	1.458	1.278	1.000	1.430	1.754	2.610	1.100	1.104	1.150
78	\$916.71	\$937.63	1.000	1.430	1.739	1.414	1.247	1.000	1.430	1.739	2.640	1.100	1.106	1.150
79	\$1,021.35	\$1,042.76	1.000	1.429	1.724	1.378	1.222	1.000	1.429	1.724	2.670	1.100	1.108	1.150
80	\$1,125.99	\$1,147.52	1.000	1.430	1.710	1.348	1.203	1.000	1.430	1.710	2.700	1.100	1.110	1.150
81	\$1,230.62	\$1,251.89	1.000	1.406	1.695	1.323	1.188	1.000	1.406	1.695	2.730	1.100	1.112	1.150
82	\$1,335.25	\$1,355.89	1.000	1.382	1.680	1.302	1.177	1.000	1.382	1.680	2.760	1.100	1.114	1.150
83	\$1,454.70	\$1,474.53	1.000	1.349	1.642	1.284	1.169	1.000	1.349	1.642	2.790	1.100	1.116	1.150
84	\$1,574.15	\$1,592.76	1.000	1.315	1.603	1.268	1.162	1.000	1.315	1.603	2.820	1.100	1.118	1.150

\* Consistent with 513 Series new business rates prior to any caps. The actual rates implemented will be capped on a seriatim basis such that no insured receives more than a 100% increase or a rate decrease.

\*\* Base rates reflect an enhanced elimination period definition based on calendar day.

Discounts	Factor
Multi-Life	0.900

Individual Underwriting Classes	Factor
Ultra Preferred	0.900
Preferred	1.000
Standard	1.250

Joint Policy Factor	1.300
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Joint Risk Class	Factor
2 Ultra Preferred	0.900
1 Ultra Preferred and 1 Preferred	0.950
1 Ultra Preferred and 1 Standard	1.075
2 Preferred	1.000
1 Preferred and 1 Standard	1.125
2 Standard	1.250

Benefit Type	Factor
Daily Reimbursement	1.000
Monthly Home and Community Based Services (HCBS) Rider	1.045
Indemnity Rider	1.370

		Elimination Period Rider	
Elimination Period	Factor**	Enhanced EP	HCBS First Day Coverage
0 Day	1.318	N/A	1.000
30 Day	1.166	N/A	1.038
60 Day	1.084	N/A	1.062
90 Day	1.000	N/A	1.094
180 Day	0.913	N/A	1.162

Rider			
Benefit Period	Premium Factor	Restoration of Benefits	Limited Family Care Giver
3 Year	0.547	1.040	1.200
4 Year	0.613	1.040	1.150
5 Year	0.673	1.040	1.120
6 Year	0.714	1.040	1.100
10 Year	0.913	1.040	1.100
Lifetime	1.066	N/A	1.

**Massachusetts Mutual Life Insurance Company**  
**500 Series**  
**Proposed Premium Rates\***

Issue Age	Annual Base Rates			Premium Factors																Discounts		Factor		
	per \$10 of Daily Benefit Amount			Inflation Protection				10 Year Paid Up				Paid Up at 65				Nonforfeiture	Return of Premium		Cov Part	Paid-Up	Single Partner	Covered Partner	Multi-Product	Multi-Life
	Facility Only	Comprehensive		None	5% Simple	3% Compound	5% Compound	None	5% Simple	3% Compound	5% Compound	None	5% Simple	3% Compound	5% Compound	Shortened BP	Less Claims	Full	Prem Waiv	Survivor				
18	\$77.79	\$88.00	1.000	2.056	2.361	6.480	3.269	3.269	3.269	3.269	1.811	1.811	3.269	1.811	1.811	1.119	1.250	1.470	1.010	1.065	1.000	0.850	0.950	0.900
19	\$77.79	\$88.00	1.000	2.056	2.361	6.446	3.269	3.269	3.269	3.269	1.811	1.811	3.269	1.811	1.811	1.119	1.250	1.470	1.010	1.065				
20	\$77.79	\$88.00	1.000	2.056	2.361	6.411	3.269	3.269	3.269	3.269	1.811	1.811	3.269	1.811	1.811	1.118	1.250	1.470	1.010	1.065				
21	\$77.79	\$88.00	1.000	2.056	2.361	6.377	3.269	3.269	3.269	3.269	1.811	1.811	3.269	1.811	1.811	1.118	1.250	1.470	1.010	1.065				
22	\$77.79	\$88.00	1.000	2.056	2.361	6.343	3.269	3.269	3.269	3.269	1.811	1.811	3.269	1.811	1.811	1.117	1.250	1.470	1.010	1.065				
23	\$77.79	\$88.00	1.000	2.056	2.361	6.302	3.269	3.269	3.269	3.269	1.811	1.811	3.269	1.811	1.811	1.116	1.250	1.470	1.010	1.065				
24	\$77.79	\$88.00	1.000	2.056	2.361	6.261	3.269	3.269	3.269	3.269	1.811	1.811	3.269	1.811	1.811	1.115	1.250	1.470	1.010	1.065				
25	\$77.79	\$88.00	1.000	2.056	2.361	6.220	3.269	3.269	3.269	3.269	1.811	1.811	3.269	1.811	1.811	1.115	1.250	1.470	1.010	1.065				
26	\$77.79	\$88.00	1.000	2.056	2.361	6.179	3.269	3.269	3.269	3.269	1.811	1.811	3.269	1.811	1.811	1.114	1.250	1.470	1.010	1.065				
27	\$77.79	\$88.00	1.000	2.056	2.361	6.138	3.269	3.269	3.269	3.269	1.811	1.811	3.269	1.811	1.811	1.113	1.250	1.470	1.010	1.065				
28	\$77.79	\$88.00	1.000	2.056	2.361	6.101	3.269	3.269	3.269	3.269	1.811	1.811	3.269	1.811	1.811	1.112	1.250	1.470	1.010	1.065				
29	\$77.79	\$88.00	1.000	2.056	2.361	6.065	3.269	3.269	3.269	3.269	1.811	1.811	3.269	1.811	1.811	1.112	1.250	1.470	1.010	1.065				
30	\$77.79	\$88.00	1.000	2.056	2.361	6.028	3.269	3.269	3.269	3.269	1.811	1.811	3.269	1.811	1.811	1.111	1.250	1.470	1.010	1.065				
31	\$77.79	\$88.00	1.000	2.056	2.361	5.992	3.269	3.269	3.269	3.269	1.811	1.811	3.269	1.811	1.811	1.111	1.250	1.470	1.010	1.065				
32	\$77.79	\$88.00	1.000	2.056	2.361	5.955	3.269	3.269	3.269	3.269	1.811	1.811	3.269	1.811	1.811	1.110	1.250	1.470	1.010	1.065				
33	\$77.79	\$88.00	1.000	2.056	2.361	5.923	3.269	3.269	3.269	3.269	1.811	1.811	3.269	1.811	1.811	1.109	1.250	1.470	1.010	1.065				
34	\$77.79	\$88.00	1.000	2.056	2.361	5.890	3.269	3.269	3.269	3.269	1.811	1.811	3.269	1.811	1.811	1.108	1.250	1.470	1.010	1.065				
35	\$77.79	\$88.00	1.000	2.056	2.361	5.858	3.269	3.269	3.269	3.269	1.811	1.811	3.269	1.811	1.811	1.107	1.250	1.470	1.010	1.065				
36	\$77.79	\$88.00	1.000	2.056	2.361	5.825	3.269	3.269	3.269	3.269	1.811	1.811	3.269	1.811	1.811	1.106	1.250	1.470	1.010	1.065				
37	\$77.79	\$88.00	1.000	2.056	2.361	5.793	3.269	3.269	3.269	3.269	1.811	1.811	3.269	1.811	1.811	1.105	1.250	1.470	1.010	1.065				
38	\$79.02	\$89.39	1.000	2.047	2.351	5.677	3.269	3.269	3.269	3.269	1.811	1.811	3.269	1.811	1.811	1.104	1.250	1.470	1.010	1.066				
39	\$80.25	\$90.78	1.000	2.038	2.341	5.561	3.269	3.269	3.269	3.269	1.811	1.811	3.269	1.811	1.811	1.103	1.250	1.470	1.010	1.067				
40	\$81.47	\$92.16	1.000	2.029	2.330	5.445	3.269	3.269	3.269	3.269	1.811	1.811	3.269	1.811	1.811	1.103	1.250	1.470	1.010	1.068				
41	\$82.70	\$93.55	1.000	2.039	2.320	5.329	3.269	3.269	3.269	3.269	1.811	1.811	3.269	1.811	1.811	1.102	1.240	1.490	1.010	1.069				
42	\$83.93	\$94.94	1.000	2.036	2.310	5.213	3.269	3.269	3.269	3.269	1.811	1.811	3.269	1.811	1.811	1.101	1.255	1.510	1.010	1.070				
43	\$86.00	\$97.28	1.000	2.044	2.299	5.106	3.221	3.221	3.221	3.221	1.856	1.856	1.856	1.856	1.856	1.101	1.272	1.543	1.010	1.072				
44	\$88.06	\$99.61	1.000	2.056	2.288	4.999	3.173	3.173	3.173	3.173	1.901	1.901	1.901	1.901	1.901	1.101	1.289	1.576	1.010	1.074				
45	\$90.12	\$101.95	1.000	2.066	2.277	4.892	3.126	3.126	3.126	3.126	1.946	1.946	1.946	1.946	1.946	1.100	1.306	1.609	1.010	1.076				
46	\$92.18	\$104.28	1.000	2.076	2.266	4.785	3.079	3.079	3.079	3.079	1.990	1.990	1.990	1.990	1.990	1.100	1.323	1.642	1.010	1.078				
47	\$94.25	\$106.62	1.000	2.085	2.255	4.678	3.033	3.033	3.033	3.033	2.033	2.033	2.033	2.033	2.033	1.100	1.340	1.675	1.010	1.080				
48	\$97.32	\$110.09	1.000	2.069	2.229	4.549	2.991	2.991	2.991	2.991	2.115	2.115	2.115	2.115	2.115	1.100	1.360	1.729	1.010	1.084				
49	\$100.39	\$113.56	1.000	2.052	2.202	4.419	2.950	2.950	2.950	2.950	2.196	2.196	2.196	2.196	2.196	1.100	1.380	1.783	1.010	1.088				
50	\$103.46	\$117.04	1.000	2.036	2.176	4.290	2.909	2.909	2.909	2.909	2.277	2.277	2.277	2.277	2.277	1.100	1.400	1.837	1.010	1.092				
51	\$106.53	\$120.51	1.000	2.049	2.149	4.160	2.869	2.869	2.869	2.869	2.356	2.356	2.356	2.356	2.356	1.100	1.420	1.891	1.010	1.096				
52	\$109.60	\$123.98	1.000	2.063	2.123	4.031	2.829	2.829	2.829	2.829	2.435	2.435	2.435	2.435	2.435	1.100	1.440	1.945	1.010	1.100				
53	\$115.15	\$130.26	1.000	2.009	2.079	3.889	2.779	2.779	2.779	2.779	2.521	2.521	2.521	2.521	2.521	1.100	1.468	2.034	1.010	1.104				
54	\$120.70	\$136.54	1.000	1.954	2.036	3.748	2.730	2.730	2.730	2.730	2.604	2.604	2.604	2.604	2.604	1.100	1.496	2.123	1.010	1.108				
55	\$126.25	\$142.82	1.000	1.903	1.992	3.606	2.684	2.684	2.684	2.684	2.684	2.684	2.684	2.684	2.684	1.100	1.524	2.212	1.010	1.112				
56	\$131.80	\$149.10	1.000	1.915	1.949	3.465	2.639	2.639	2.639	2.639	N/A	N/A	N/A	N/A	N/A	1.100	1.552	2.301	1.010	1.116				
57	\$137.36	\$155.38	1.000	1.928	1.905	3.323	2.595	2.595	2.595	2.595	N/A	N/A	N/A	N/A	N/A	1.100	1.580	2.390	1.010	1.120				
58	\$146.81	\$166.08	1.000	1.894	1.858	3.191	2.527	2.527	2.527	2.527	N/A	N/A	N/A	N/A	N/A	1.100	1.617	2.551	1.010	1.124				
59	\$156.27	\$176.78	1.000	1.855	1.810	3.058	2.463	2.463	2.463	2.463	N/A	N/A	N/A	N/A	N/A	1.100	1.654	2.712	1.010	1.128				
60	\$165.72	\$187.47	1.000	1.819	1.763	2.926	2.403	2.403	2.403	2.403	N/A	N/A	N/A	N/A	N/A	1.100	1.691	2.873	1.010	1.132				
61	\$175.18	\$198.17	1.000	1.783	1.715	2.793	2.346	2.346	2.346	2.346	N/A	N/A	N/A	N/A	N/A	1.100	1.728	3.034	1.010	1.136				
62	\$184.64	\$208.87	1.000	1.748	1.668	2.661	2.293	2.293	2.293	2.293	N/A	N/A	N/A	N/A	N/A	1.100	1.765	3.195	1.010	1.140				
63	\$202.27	\$228.81	1.000	1.710	1.639	2.585	2.205	2.205	2.205	2.205	N/A	N/A	N/A	N/A	N/A	1.100	1.817	3.569	1.012	1.142				
64	\$219.90	\$248.76	1.000	1.669	1.609	2.509	2.126	2.126	2.126	2.126	N/A	N/A	N/A	N/A	N/A	1.100	1.869	3.943	1.014	1.144				
65	\$237.53	\$268.70	1.000	1.632	1.580	2.432	2.054	2.054	2.054	2.054	N/A	N/A	N/A	N/A	N/A	1.100	1.921	4.317	1.016	1.146				
66	\$255.17	\$288.65	1.000	1.634	1.550	2.356	1.990	1.990	1.990	1.990	N/A	N/A	N/A	N/A	N/A	1.100	1.973	N/A	1.018	1.148				
67	\$272.79	\$308.59	1.000	1.631	1.521	2.280	1.931	1.931	1.931	1.931	N/A	N/A	N/A	N/A	N/A	1.100	2.025	N/A	1.020	1.150				
68	\$309.44	\$350.04	1.000	1.599	1.493	2.207	1.852	1.852	1.852	1.852	N/A	N/A	N/A	N/A	N/A	1.100	2.101	N/A	1.022	1.150				
69	\$346.08	\$391.49	1.000	1.565	1.465	2.134	1.784	1.784	1.784	1.784	N/A	N/A	N/A	N/A	N/A	1.100	2.177	N/A	1.024	1.150				

**Massachusetts Mutual Life Insurance Company**

**511 Series**

**Proposed Premium Rates\***

Issue Age	Annual Base Rates		Premium Factors											
	per \$10 of Daily Benefit Amount		Inflation Protection			Limited Pay		Nonforfeiture	Return of Premium		Cov Part	Paid-Up		
	Facility Only	Comprehensive	None	3% Compound	5% Compound	10 Yr	To 65	Shortened BP	Less Claims	Full	Prem Waiv	Survivor		
18	\$77.79	\$88.00	1.000	2.361	6.480	3.269	1.811	1.119	1.250	1.470	1.010	1.065		
19	\$77.79	\$88.00	1.000	2.361	6.446	3.269	1.811	1.119	1.250	1.470	1.010	1.065		
20	\$77.79	\$88.00	1.000	2.361	6.411	3.269	1.811	1.118	1.250	1.470	1.010	1.065		
21	\$77.79	\$88.00	1.000	2.361	6.377	3.269	1.811	1.118	1.250	1.470	1.010	1.065		
22	\$77.79	\$88.00	1.000	2.361	6.343	3.269	1.811	1.117	1.250	1.470	1.010	1.065		
23	\$77.79	\$88.00	1.000	2.361	6.302	3.269	1.811	1.116	1.250	1.470	1.010	1.065		
24	\$77.79	\$88.00	1.000	2.361	6.261	3.269	1.811	1.115	1.250	1.470	1.010	1.065		
25	\$77.79	\$88.00	1.000	2.361	6.220	3.269	1.811	1.115	1.250	1.470	1.010	1.065		
26	\$77.79	\$88.00	1.000	2.361	6.179	3.269	1.811	1.114	1.250	1.470	1.010	1.065		
27	\$77.79	\$88.00	1.000	2.361	6.138	3.269	1.811	1.113	1.250	1.470	1.010	1.065		
28	\$77.79	\$88.00	1.000	2.361	6.101	3.269	1.811	1.112	1.250	1.470	1.010	1.065		
29	\$77.79	\$88.00	1.000	2.361	6.065	3.269	1.811	1.112	1.250	1.470	1.010	1.065		
30	\$77.79	\$88.00	1.000	2.361	6.028	3.269	1.811	1.111	1.250	1.470	1.010	1.065		
31	\$77.79	\$88.00	1.000	2.361	5.992	3.269	1.811	1.111	1.250	1.470	1.010	1.065		
32	\$77.79	\$88.00	1.000	2.361	5.955	3.269	1.811	1.110	1.250	1.470	1.010	1.065		
33	\$77.79	\$88.00	1.000	2.361	5.923	3.269	1.811	1.109	1.250	1.470	1.010	1.065		
34	\$77.79	\$88.00	1.000	2.361	5.890	3.269	1.811	1.108	1.250	1.470	1.010	1.065		
35	\$77.79	\$88.00	1.000	2.361	5.858	3.269	1.811	1.107	1.250	1.470	1.010	1.065		
36	\$77.79	\$88.00	1.000	2.361	5.825	3.269	1.811	1.106	1.250	1.470	1.010	1.065		
37	\$77.79	\$88.00	1.000	2.361	5.793	3.269	1.811	1.105	1.250	1.470	1.010	1.065		
38	\$79.02	\$89.39	1.000	2.351	5.677	3.269	1.811	1.104	1.250	1.470	1.010	1.066		
39	\$80.25	\$90.78	1.000	2.341	5.561	3.269	1.811	1.103	1.250	1.470	1.010	1.067		
40	\$81.47	\$92.16	1.000	2.330	5.445	3.269	1.811	1.103	1.250	1.470	1.010	1.068		
41	\$82.70	\$93.55	1.000	2.320	5.329	3.269	1.811	1.102	1.240	1.490	1.010	1.069		
42	\$83.93	\$94.94	1.000	2.310	5.213	3.269	1.811	1.101	1.255	1.510	1.010	1.070		
43	\$86.00	\$97.28	1.000	2.299	5.106	3.221	1.856	1.101	1.272	1.543	1.010	1.072		
44	\$88.06	\$99.61	1.000	2.288	4.999	3.173	1.901	1.101	1.289	1.576	1.010	1.074		
45	\$90.12	\$101.95	1.000	2.277	4.892	3.126	1.946	1.100	1.306	1.609	1.010	1.076		
46	\$92.18	\$104.28	1.000	2.266	4.785	3.079	1.990	1.100	1.323	1.642	1.010	1.078		
47	\$94.25	\$106.62	1.000	2.255	4.678	3.033	2.033	1.100	1.340	1.675	1.010	1.080		
48	\$97.32	\$110.09	1.000	2.229	4.549	2.991	2.115	1.100	1.360	1.729	1.010	1.084		
49	\$100.39	\$113.56	1.000	2.202	4.419	2.950	2.196	1.100	1.380	1.783	1.010	1.088		
50	\$103.46	\$117.04	1.000	2.176	4.290	2.909	2.277	1.100	1.400	1.837	1.010	1.092		
51	\$106.53	\$120.51	1.000	2.149	4.160	2.869	2.356	1.100	1.420	1.891	1.010	1.096		
52	\$109.60	\$123.98	1.000	2.123	4.031	2.829	2.435	1.100	1.440	1.945	1.010	1.100		
53	\$115.15	\$130.26	1.000	2.079	3.889	2.779	2.521	1.100	1.468	2.034	1.010	1.104		
54	\$120.70	\$136.54	1.000	2.036	3.748	2.730	2.604	1.100	1.496	2.123	1.010	1.108		
55	\$126.25	\$142.82	1.000	1.992	3.606	2.684	2.684	1.100	1.524	2.212	1.010	1.112		
56	\$131.80	\$149.10	1.000	1.949	3.465	2.639	N/A	1.100	1.552	2.301	1.010	1.116		
57	\$137.36	\$155.38	1.000	1.905	3.323	2.595	N/A	1.100	1.580	2.390	1.010	1.120		
58	\$146.81	\$166.08	1.000	1.858	3.191	2.527	N/A	1.100	1.617	2.551	1.010	1.124		
59	\$156.27	\$176.78	1.000	1.810	3.058	2.463	N/A	1.100	1.654	2.712	1.010	1.128		
60	\$165.72	\$187.47	1.000	1.763	2.926	2.403	N/A	1.100	1.691	2.873	1.010	1.132		
61	\$175.18	\$198.17	1.000	1.715	2.793	2.346	N/A	1.100	1.728	3.034	1.010	1.136		
62	\$184.64	\$208.87	1.000	1.668	2.661	2.293	N/A	1.100	1.765	3.195	1.010	1.140		
63	\$202.27	\$228.81	1.000	1.639	2.585	2.205	N/A	1.100	1.817	3.569	1.012	1.142		
64	\$219.90	\$248.76	1.000	1.609	2.509	2.126	N/A	1.100	1.869	3.943	1.014	1.144		
65	\$237.53	\$268.70	1.000	1.580	2.432	2.054	N/A	1.100	1.921	4.317	1.016	1.146		
66	\$255.17	\$288.65	1.000	1.550	2.356	1.990	N/A	1.100	1.973	N/A	1.018	1.148		
67	\$272.79	\$308.59	1.000	1.521	2.280	1.931	N/A	1.100	2.025	N/A	1.020	1.150		
68	\$309.44	\$350.04	1.000	1.493	2.207	1.852	N/A	1.100	2.101	N/A	1.022	1.150		
69	\$346.08	\$391.49	1.000	1.465	2.134	1.784	N/A	1.100	2.177	N/A	1.024	1.150		
70	\$382.71	\$432.93	1.000	1.437	2.060	1.725	N/A	1.100	2.253	N/A	1.026	1.150		
71	\$419.35	\$474.38	1.000	1.409	1.987	1.674	N/A	1.100	2.329	N/A	1.028	1.150		
72	\$455.99	\$515.83	1.000	1.381	1.914	1.629	N/A	1.100	2.405	N/A	1.030	1.150		
73	\$518.02	\$586.00	1.000	1.367	1.882	1.581	N/A	1.100	2.521	N/A	1.036	1.150		
74	\$580.05	\$656.16	1.000	1.352	1.850	1.542	N/A	1.100	2.637	N/A	1.042	1.150		
75	\$642.08	\$726.33	1.000	1.338	1.818	1.509	N/A	1.100	2.753	N/A	1.048	1.150		
76	\$704.10	\$796.49	1.000	1.323	1.786	1.482	N/A	1.100	2.869	N/A	1.054	1.150		
77	\$766.13	\$866.66	1.000	1.309	1.754	1.458	N/A	1.100	2.985	N/A	1.060	1.150		
78	\$864.83	\$978.32	1.000	1.301	1.739	1.414	N/A	1.100	3.170	N/A	1.066	1.150		
79	\$963.54	\$1,089.98	1.000	1.293	1.724	1.378	N/A	1.100	3.355	N/A	1.072	1.150		
80	\$1,062.26	\$1,201.65	1.000	1.286	1.710	1.348	N/A	1.100	3.541	N/A	1.078	1.150		
81	\$1,160.97	\$1,313.31	1.000	1.278	1.695	1.323	N/A	1.100	3.726	N/A	1.084	1.150		
82	\$1,259.67	\$1,424.97	1.000	1.270	1.680	1.302	N/A	1.100	3.911	N/A	1.090	1.150		
83	\$1,372.36	\$1,552.44	1.000	1.252	1.642	1.284	N/A	1.100	4.361	N/A	1.092	1.150		
84	\$1,485.05	\$1,679.92	1.000	1.234	1.603	1.268	N/A	1.100	4.811	N/A	1.095	1.150		

Discounts	Factor
Single	1.000
Partner	0.850
Covered Partner	0.700
Multi-Product	0.950
Multi-Life	0.900

Individual Underwriting Classes	Factor
Ultra Preferred	0.900
Select Preferred	1.000
Preferred	1.250
Standard Plus	2.500
Standard	5.000

Benefit Type	Factor
Daily Reimbursement	1.000
Monthly Home and Community Based Services (HCBS) Rider	1.045

Elimination Period Riders			
Elimination Period	Factor	Enhanced EP	HCBS EP Waiver
0 Day	N/A	N/A	N/A
30 Day	1.200	1.030	1.070
60 Day	1.100	1.045	1.110
90 Day	1.000	1.060	1.160
180 Day	0.900	1.075	1.250

Rider			
Benefit Period	Premium Factor	Restoration of Benefits	Shared Care
1 Year	N/A	N/A	N/A
1.5 Year	N/A	N/A	N/A
2 Year	0.447	1.040	1.353
3 Year	0.547	1.040	1.290
4 Year	0.613	1.040	1.290
5 Year	0.673	1.040	1.290
6 Year	0.714	1.040	1.290
10 Year	0.913	1.040	1.167
Lifetime	1.066	N/A	N/A

Payment Mode	Factor
Annual	1.000
Semi-Annual	0.520
Quarterly	0.265
Monthly - Pre-Authorized Check	0.088

\* Consistent with 513 Series new business rates prior to any caps. The actual rates implemented will be capped on a serialtim basis such that no insured receives more than a 100% increase or a rate decrease.

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

## Supporting Document Schedules

<b>Satisfied - Item:</b>	Certification of Compliance
<b>Comments:</b>	
<b>Attachment(s):</b>	VA Certificate of Compliance 202105.pdf
<b>Item Status:</b>	Received & Acknowledged
<b>Status Date:</b>	05/18/2021

<b>Satisfied - Item:</b>	Product Checklist
<b>Comments:</b>	
<b>Attachment(s):</b>	VA_Rate Review Requirements Checklist_20180830.pdf
<b>Item Status:</b>	Received & Acknowledged
<b>Status Date:</b>	05/18/2021

<b>Satisfied - Item:</b>	L&H Actuarial Memorandum
<b>Comments:</b>	
<b>Attachment(s):</b>	VA_Act Memo_MML_LRRS_20180830.pdf
<b>Item Status:</b>	Received & Acknowledged
<b>Status Date:</b>	05/18/2021

<b>Satisfied - Item:</b>	Long Term Care Insurance Rate Request Summary
<b>Comments:</b>	
<b>Attachment(s):</b>	VA_Long Term Care Insurance Rate Request Summary_20180830.pdf
<b>Item Status:</b>	Received & Acknowledged
<b>Status Date:</b>	05/18/2021

<b>Satisfied - Item:</b>	L&H Readability - Health
<b>Comments:</b>	
<b>Attachment(s):</b>	VA Readability Certification 202105.pdf
<b>Item Status:</b>	Received & Acknowledged
<b>Status Date:</b>	05/18/2021

<b>Satisfied - Item:</b>	Letter of Authorization
<b>Comments:</b>	
<b>Attachment(s):</b>	Authorization to File 20180327.pdf
<b>Item Status:</b>	Received & Acknowledged

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

<b>Status Date:</b>	05/18/2021
<b>Satisfied - Item:</b>	Statement of Variability
<b>Comments:</b>	
<b>Attachment(s):</b>	SOV for FR2251EF-VA 202104.pdf SOV for FR2251-VA-1 (0820) 202105.pdf
<b>Item Status:</b>	Received & Acknowledged
<b>Status Date:</b>	05/18/2021
<b>Satisfied - Item:</b>	Cover Letter
<b>Comments:</b>	
<b>Attachment(s):</b>	VA_Cover Letter_MML_LRRS_20180830.pdf
<b>Item Status:</b>	Received & Acknowledged
<b>Status Date:</b>	05/18/2021
<b>Satisfied - Item:</b>	Supplement to the Actuarial Memorandum
<b>Comments:</b>	
<b>Attachment(s):</b>	VA_Suplement_MML_LRRS_20180830.pdf VA_Supplement Attachments 8-16_20180830.xlsb Recouping Past LTC Losses.pdf
<b>Item Status:</b>	Received & Acknowledged
<b>Status Date:</b>	05/18/2021
<b>Satisfied - Item:</b>	Current Rate Tables
<b>Comments:</b>	
<b>Attachment(s):</b>	VA_Current Rate Tables_200 Series_20180830.pdf VA_Current Rate Tables_300 Series_20180830.pdf VA_Current Rate Tables_400 Series_20180830.pdf VA_Current Rate Tables_500 Series_20180830.pdf VA_Current Rate Tables_511 Series_20180830.pdf
<b>Item Status:</b>	Received & Acknowledged
<b>Status Date:</b>	05/18/2021
<b>Satisfied - Item:</b>	Original Actuarial Memoranda
<b>Comments:</b>	



<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

<b>Attachment(s):</b>	MM200 VA actuarial.pd_1.pdf MM200 VA actuarial.pd_2.pdf MM200 VA actuarial.pd_3.pdf MM200 VA actuarial.pd_4.pdf MM200 VA enhance.actuarial.pd.pdf MM300-VA Actuarial.pd.pdf MM400-VA actuarial.pdf MM500 Actuarial Memorandum - VA-10-11-07.pdf MM501 Actuarial Memorandum - VA-10-11-07.pdf MM500-1 Actuarial Memo - VA.pdf MM501-1 Actuarial Memo - VA.pdf
<b>Item Status:</b>	Received & Acknowledged
<b>Status Date:</b>	05/18/2021
<b>Satisfied - Item:</b>	Response to October 21, 2019 Request
<b>Comments:</b>	
<b>Attachment(s):</b>	VA_Response to 20191021 Request_MML_20191104.xlsb
<b>Item Status:</b>	Received & Acknowledged
<b>Status Date:</b>	05/18/2021
<b>Satisfied - Item:</b>	Response to April 27, 2020 Requests
<b>Comments:</b>	
<b>Attachment(s):</b>	VA_Response to 20200427 Objection_20200527.pdf VA_Response to 20200427 Objection Attachments_MML_20200527.xlsb
<b>Item Status:</b>	Received & Acknowledged
<b>Status Date:</b>	05/18/2021
<b>Satisfied - Item:</b>	June 16, 2020 Amendment Letter
<b>Comments:</b>	
<b>Attachment(s):</b>	VA_Amendment_MML_LRRS_20200616.pdf
<b>Item Status:</b>	Received & Acknowledged
<b>Status Date:</b>	05/18/2021
<b>Satisfied - Item:</b>	July 30, 2020 Amendment Letter
<b>Comments:</b>	
<b>Attachment(s):</b>	VA_Amendment_MML_LRRS_20200730.pdf
<b>Item Status:</b>	Received & Acknowledged
<b>Status Date:</b>	05/18/2021
<b>Satisfied - Item:</b>	John Doe Sample Policyowner Notification Letter

<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified		
<b>Product Name:</b>	Long-Term Care		
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02		

<b>Comments:</b>	
<b>Attachment(s):</b>	FR2251-VA-1 (John Doe Sample).pdf FR2251EF-VA (John Doe Sample).pdf
<b>Item Status:</b>	Received & Acknowledged
<b>Status Date:</b>	05/18/2021

<b>Satisfied - Item:</b>	Response to August 25, 2020 Requests
<b>Comments:</b>	
<b>Attachment(s):</b>	VA_Response to 20200825 Objection_20200923.pdf
<b>Item Status:</b>	Received & Acknowledged
<b>Status Date:</b>	05/18/2021

<b>SERFF Tracking #:</b>	MILL-131569310	<b>State Tracking #:</b>	MILL-131569310	<b>Company Tracking #:</b>	MASSMUTUAL
<hr/>					
<b>State:</b>	Virginia	<b>Filing Company:</b>	Massachusetts Mutual Life Insurance Company		
<b>TOI/Sub-TOI:</b>	LTC03I Individual Long Term Care/LTC03I.001 Qualified				
<b>Product Name:</b>	Long-Term Care				
<b>Project Name/Number:</b>	MassMutual LTC Rate Increase Filing/145MML01-10.02				

***Attachment VA\_Supplement Attachments 8-16\_20180830.xlsb is not a PDF document and cannot be reproduced here.***

***Attachment VA\_Response to 20191021 Request\_MML\_20191104.xlsb is not a PDF document and cannot be reproduced here.***

***Attachment VA\_Response to 20200427 Objection Attachments\_MML\_20200527.xlsb is not a PDF document and cannot be reproduced here.***

Virginia Certificate of Compliance

THE COMPANY HAS REVIEWED THE ENCLOSED POLICY FORM(S) AND CERTIFIES THAT, TO THE BEST OF ITS KNOWLEDGE AND BELIEF, EACH FORM SUBMITTED IS CONSISTENT AND COMPLIES WITH THE REQUIREMENTS OF THE TITLE 38.2 OF THE CODE OF VIRGINIA AND THE REGULATIONS PROMULGATED PURSUANT THERETO.

A handwritten signature in black ink, appearing to read "R. Fawthrop", written over a horizontal line.

Roland Fawthrop

Head of Health Product Management & Actuary

Date: May 13, 2021

### Rate Review Requirements Checklist

**For all Rate Filings for Forms Issued in the Individual and Small Group Markets, Hospital Confinement Indemnity, Disability Income Protection, Accident Only, Specified Disease and Other, whether paid on an expense incurred or indemnity basis, and Medicare Supplement**

**NOTE:** This document is intended to assist carriers in preparing rate filings for individual and selected group accident and sickness insurance coverage for approval by the Bureau of Insurance. It provides guidance based on current Virginia laws and regulations. It should be noted, however, that this checklist should not be used exclusive of other important resources, including, but not limited to, any and all other applicable state insurance laws and associated rules and regulations. It is the responsibility of the carriers to verify that their products comply with all relevant statutory and regulatory requirements. Note that some regulatory references in the comments column are approximate. Please review the applicable Administrative Code for the full text of the regulation.

REVIEW REQUIREMENTS	REFERENCE	COMMENTS	LOCATION IN THE FILING TO INCLUDE EXHIBIT NAME OR NUMBER	FILER'S NOTES
<b>General Filing Requirements</b>				
Agent Commissions	§ 38.2-316.1	Describe agent commissions including any limitations or exceptions. (ACA Individual and Small Group Markets Only)		Not Applicable
Certification of Compliance	14VAC5-100-40 3	Certificate of Compliance signed by General Counsel or officer of the company, or attorney, or actuary representing company is required. This is not required if this is a rate only filing.	SERFF	
Information about the filing	14VAC5-100-70	When submitting an Individual Accident and Sickness form, a company must file the applicable rates, rules and classification of risks with the Commission.	Cover letter	
Company Name and NAIC No.	Administrative Letter 1983-7	The transmittal letter must include the name and NAIC number of the company for which the filing is made.	Cover Letter	
<b>Additional SERFF Filing Requirements</b>	<b>Administrative Letter 2012-03</b>	<b>Additional SERFF filing requirements must be met as specified below for life and health forms and rate filings.</b>		
General Information Filing Description		All submissions must provide a brief summary of the filing, including a statement describing whether the rate or rate manual is new or a revision of an existing rate or rate manual.	Cover Letter	
		Identification of SERFF or state tracking number for the previously approved rate or rate manual.	SERFF Rate/Rule Schedule tab	
<b>HELP TIP:</b>		If a form or rate filing is submitted as new in Virginia, but was previously disapproved or withdrawn in Virginia, please provide details such as the tracking information, form number, and the date that the form or rate filing was disapproved or withdrawn, if available.		
Rate Changes		(i) Include a statement regarding an increase, decrease, revision of former rates. (ii) Specify the percentage amount(s) of the change(s).	(i) Cover Letter (ii) Cover Letter	

REVIEW REQUIREMENTS	REFERENCE	COMMENTS	LOCATION IN THE FILING TO INCLUDE EXHIBIT NAME OR NUMBER	FILER'S NOTES
		(iii) Specify the number of affected policyholders. (iv) Specify the reason for the proposed change(s).	(iii) Actuarial Memorandum (AM) Sections 19 & 22 (iv) AM Section 2 & 18	
	14VAC5-130-50 B	Include an actuarial memorandum describing the basis on which rates were determined including a description of the calculation of the anticipated loss ratio.	AM Sections 2, 6, 15, & 16	
Individual and Small Group Markets – Uniform Age Rating Curve	14VAC5-130- 50 E 1 Virginia Rate Template	Premium rates with respect to a particular plan or coverage may only vary by: (a) Whether the plan or coverage covers an individual or family; (b) The rating area; (c) Age, consistent with the Federal Default Standard Age Curve; (d) Tobacco use, except the rate must not vary more than 1.5 to 1. If included in a small group form, employees must be given the option to avoid the tobacco surcharge by participating in certain wellness programs.		Not Applicable
	14VAC5-130-50 E 2	A premium rate must not vary by any other factor not described in 14VAC5-130-50 E 1.		Not Applicable
	14VAC5-130-50 E 3	For family coverage, permitted rating variations must be applied based on the portion of premium attributable to each family member covered under the plan. With respect to family members under age 21, the premiums for no more than the three oldest covered children must be taken into account in determining the total family premium.		Not Applicable
	14VAC5-130-50 E 4	The premium charged must not be adjusted more frequently than annually except that the premium rate may be changed to reflect changes to: (i) Family composition of the member or; (ii) Coverage requested by the member.		Not Applicable
	14VAC5-130-50 E 5	Premium Rates for student health insurance coverage may be based on school-specific community rating and are exempt from subdivision 1 through 4 above.		Not Applicable
Accident and Sickness Insurance Rate Filing Requirements – Filing a Rate for a New Policy Form	14VAC5-130-60 A	New rate submission must include: (i) Form number of applicable policy or certificate, application, and endorsements; (ii) Rate Sheet(s); (iii) An actuarial memorandum; (iv) All information required in SERFF. Unified Rate Review Template shall also be filed for coverage issued in the individual or small group markets, <i>except for student health insurance coverage</i> .		Not Applicable

REVIEW REQUIREMENTS	REFERENCE	COMMENTS	LOCATION IN THE FILING TO INCLUDE EXHIBIT NAME OR NUMBER	FILER'S NOTES
	14VAC5-130-60 B	<b>An Actuarial Memorandum that includes:</b>		
	14VAC5-130-60 B 1	A description of the type of policy or coverage, including benefits, renewability, general marketing method, and issue age limits.		Not Applicable
	14VAC5-130-60 B 2	A description of how rates were determined, including the general description and source of each assumption used.		Not Applicable
	14VAC5-130-60 B 3	The estimated average annual premium per policy and per member.		Not Applicable
	14VAC5-130-60 B 4	The anticipated loss ratio and a description of how it was calculated.		Not Applicable
	14VAC5-130-60 B 5	The minimum anticipated loss ratio presumed reasonable in accordance with 14VAC5-130-65.		Not Applicable
	14VAC5-130-60 B 6	If the anticipated loss ratio is less than the minimum anticipated loss ratio, include supporting documentation for the use of such premiums.		Not Applicable
	14VAC5-130-60 B 7	<i>For coverage issued in the Individual or Small Group Health Insurance Market:</i> A certification by a qualified actuary of the actuarial value of each plan of benefits included and the AV calculation summary.		Not Applicable
	14VAC5-130-60 B 8	A certification by a qualified actuary that, to the best of his or her knowledge and judgment, the rate filing is in compliance with the applicable laws and regulations of Virginia and the premiums are reasonable in relation to the benefits provided.		Not Applicable
Reasonableness of benefits in relation to initial premiums	14VAC5-130-65 A	Benefits are deemed reasonable in relation to premiums if the anticipated loss ratio of policy form, including riders and endorsements, is at least as great as specified in the table provided, taking into account the qualifications and adjustments in subdivisions 1 through 9 below. The below anticipated loss ratio standards do not apply to a class of business where such standards are in conflict with specific statutes or regulations.		Not Applicable

REVIEW REQUIREMENTS	REFERENCE	COMMENTS					LOCATION IN THE FILING TO INCLUDE EXHIBIT NAME OR NUMBER	FILER'S NOTES
	14VAC5-130-65 A 1	If the expected average annual premium is at least \$200 but less than \$1,000.						
		Type of Coverage	<u>Renewal Clause</u>					
			<u>OR</u>	<u>CR</u>	<u>GR</u>	<u>NC</u>	<u>Other</u>	
		<u>Hospital Indemnity</u>	<u>60%</u>	<u>55%</u>	<u>55%</u>	<u>50%</u>	<u>60%</u>	
		<u>Disability Income Protection, Accident Only, Specified Disease and Other, whether paid on an expense incurred or indemnity basis</u>	<u>60%</u>	<u>55%</u>	<u>50%</u>	<u>45%</u>	<u>60%</u>	
	14VAC5-130-65 A 2	If the expected average annual premium is \$100 or more but less than \$200, subtract five percentage points from the numbers in the table.						Not Applicable
	14VAC5-130-65 A 3	If the expected average annual premium is less than \$100, subtract 10 percentage points from the numbers in the table.						Not Applicable
	14VAC5-130-65 A 4	If the expected average annual premium is \$1,000 or more, add five percentage points to the numbers in the table.						Not Applicable
	14VAC5-130-65 A 5	Group Medicare supplement policies are expected to return to policyholders in the form of aggregate benefits under the policy at least 75% of the aggregate amount of premiums collected.						Not Applicable



REVIEW REQUIREMENTS	REFERENCE	COMMENTS	LOCATION IN THE FILING TO INCLUDE EXHIBIT NAME OR NUMBER	FILER'S NOTES
	14VAC5-130-65 A 6	Medicare supplement policies issued prior to July 30, 1992, as a result of solicitation of individuals through the mail or by mass media advertising, which shall include both print and broadcast advertising, are expected to return to policyholders in the form of aggregate benefits under the policy at least 60% of the aggregate amount of premiums collected.		Not Applicable
	14VAC5-130-65 A 7	Medicare supplement policies issued prior to July 30, 1992, sold on an individual rather than a group basis are expected to return to policyholders in the form of aggregate benefits under the policy at least 60% of the aggregate amount of premiums collected.		Not Applicable
	14VAC5-130-65 A 8	All health insurance coverage issued in the individual health insurance market shall be originally priced to meet a minimum 75% loss ratio and, except for student health insurance coverage, must be guaranteed renewable or noncancellable.		Not Applicable
	14VAC5-130-65 A 9	All health insurance coverage issued in the small group health insurance market must be originally priced to meet a minimum 75% loss ratio and must be guaranteed renewable or noncancellable.		Not Applicable
	14VAC5-130-65 B	The average annual premium per policy per member shall be computed by the health insurance issuer based on an anticipated distribution of business by all applicable criteria having a price difference, such as age, sex, amount, dependent status, rider frequency, etc., except assuming an annual mode for all policies ( <i>i.e., the fractional premium loading shall not affect the average annual premium or anticipated loss ratio calculation</i> ).		Not Applicable

REVIEW REQUIREMENTS	REFERENCE	COMMENTS	LOCATION IN THE FILING TO INCLUDE EXHIBIT NAME OR NUMBER	FILER'S NOTES
For Rate Revision, all Accident and Sickness Forms; Subscriber Contracts of Hospital, Medical or Surgical Plans; Dental Plans; Optometric Plans; Health Insurance Coverage in the Individual and Small Group Markets; Group Medicare supplement forms and subscriber contracts of hospital, medical or surgical plans – Filing a Rate Revision	14VAC5-130-70 A	Rate revision submission must include: (i) New Rate Sheet; (ii) An actuarial memorandum; and (iii) All information required in SERFF.  Unified Rate Review Template shall be filed for coverage issued in the individual or small group markets, <i>except for student health insurance coverage</i> .	(i) SERFF Rate/Rule Schedule Tab (ii) SERFF (iii) Not Applicable	
	14VAC5-130-70 B	<b>Actuarial Memorandum that includes:</b>		
	14VAC5-130-70 B 1	A description of the type of policy, including benefits, renewability, issue age limits, and if applicable, whether the policy includes grandfathered, non-grandfathered plans, or both.	AM Sections 3, 4, & 10	
	14VAC5-130-70 B 2	The scope and reason for the premium or rate revision.	AM Sections 2 & 18	
	14VAC5-130-70 B 3	A comparison of the revised premiums with the current premium scale, including all percentage rate changes and any rating factor changes.	Cover Letter & AM Section 2	
	14VAC5-130-70 B 4	A statement of whether the revision applies only to new business, only to in-force business, or to both.	AM Section 5	
	14VAC5-130-70 B 5	The estimated average annual premium per policy and per member, before and after the proposed rate revision. If different changes by rating classification are requested, the filing also must include: (i) Range of changes; and (ii) average overall change, including a detailed explanation of how the change was determined.	AM Section 2 & 19	
	14VAC5-130-70 B 6	<i>The following is applicable to all coverage with the exception of coverage issued in the small group market:</i> Submit Form 130-A showing historical and projected experience, including: (i) Projections for future experience, and Virginia and national historical experience of earned premiums, paid claims, incurred claims and loss from inception through most	(i) Supplement to the Actuarial Memorandum (SAM) Section 3	Actual and projected experience are based on historical experience through December 31, 2016 with claim runout through December 31, 2017, which is the most recent data available.

REVIEW REQUIREMENTS	REFERENCE	COMMENTS	LOCATION IN THE FILING TO INCLUDE EXHIBIT NAME OR NUMBER	FILER'S NOTES
		<p>recent quarter. Virginia and national experience should be shown separately. Missing experience should be estimated with all estimation assumptions and methodologies provided in detail;</p> <p>(ii) A statement of the basis for determining the rate revision (Virginia, national, or blended); and</p> <p>(iii) If blended, provide the credibility factor assigned to the national experience.</p>	<p>(ii) SAM Section 3</p> <p>(iii) Not Applicable</p>	
	14VAC5-130-70 B 7	Details and dates of all past rate revisions, including annual rate revisions members will experience resulting from this filing. If a company only revises rates annually, the rate revision must be identical to the current submission. If a company has had more frequent rate revisions, the annual revision must reflect the compounding impact of all revisions for the past 12 months.	AM Section 17	
	14VAC5-130-70 B 8	A description of how revised rates were determined, including the general description and source of each assumption of Form 130-A. For claims, provide historical and projected claims by major service category for both cost and utilization on Form 130-B.	AM Sections 2, 6, & 18	
	14VAC5-130-70 B 9	If the rate revision applies to new business, provide the anticipated loss ratio and a description of how it was calculated.		Not Applicable
	14VAC5-130-70 B 10	<p>If the rate revision applies to in-force business provide:</p> <p>(a) The anticipated loss ratio and a description of how it was calculated; and</p> <p>(b) The estimated cumulative loss ratio, historical and anticipated, and a description of how it was calculated.</p>	SAM Sections 3 and 4	
	14VAC5-130-70 B 11	The loss ratio that was originally anticipated for the policy.	AM Section 16	
	14VAC5-130-70 B 12	If 9, 10a, or 10b is less than 11, supporting documentation for the use of such premiums or rates.		Not Applicable
	14VAC5-130-70 B 13	The current number of Virginia and national members to which the revision applies for the most recent month for which such data is available, and either premiums in force, premiums earned, or premiums collected for such members in the year immediately prior to the filing of the rate revision.	AM Section 22	
	14VAC5-130-70 B 14	Certification by a qualified actuary that, to the best of the actuary's knowledge and judgment, the rate filing is in compliance with applicable laws and regulations of this Commonwealth and the premiums are reasonable in relation to the benefits provided.	AM Section 23	

	14VAC5-130-70 B 15	For coverage issued in the individual or small group health insurance markets, a certification by a qualified actuary of the actuarial value of each plan of benefits included and the AV calculation summary.		Not Applicable
Health Insurance Issuer – Filing a Rate Revision	14VAC5-130-75 A	For individual accident and sickness insurance, individual, and group Medicare supplement insurance, and coverage issued in the individual market, with respect to filings of rate revisions for a previously approved form, benefits shall be deemed reasonable in relation to premiums provided the present values of the future and lifetime loss ratios are at least as great as the standards in 14VAC5-130-70 B 11. Interest, at a rate consistent with that assumed in the original effective date of the form to the effective date of the revision and the present value of future premiums.	AM Section 16	
Health Insurance Issuer – Filing a Rate Revision	14VAC5-130-75 B	For coverage issued in the small group health insurance market, the anticipated loss ratio over the entire period for which the revised rates are computed to provide coverage must be at least as great as the standards in 14VAC5-130-70 B 11.		Not Applicable
Health Insurance Issuer – Filing a Rate Revision	14VAC5-130-75 C	Revised premiums for policies issued on or after the effective date of the revision must meet the standards in 14VAC5-130-65, except the average annual premium shall be determined on actual rather than anticipated distribution of business.		Not Applicable
<b>Medicare Supplement Requirements</b>		<i>Applicable requirements for Medicare Supplement insurance rate filings in addition to the above:</i>		
Standardized Medicare Supplement Forms	14VAC5-170-120 A 1	A Medicare supplement policy or certificate shall not be delivered or issued for delivery unless the policy form or certificate form can be expected, as estimated for the entire premium period for which rates are computed to provide coverage, to return to policyholders and certificateholders in the form of aggregate benefits (not including anticipated refunds or credits) provided under the policy or certificate form: (a) At least 75% of the aggregate amount of premiums earned in the case of group policies; or (b) At least 65% of the aggregate amount of premiums earned in the case of individual policies.		Not Applicable
	14VAC5-170-120 A 2	All filings of rates and rating schedules shall demonstrate that expected claims in relation to premiums comply with the requirements of this section when combined with actual experience to date. Filings of rate revisions shall also demonstrate that the anticipated loss ratio over the entire future period for which the revised rates are computed to provide coverage can be expected to meet the appropriate loss ratio standards.		Not Applicable

Pre-Standardized Medicare Supplement Forms	14VAC5-170-120 A 3	<p>For policies issued prior to July 30, 1992, expected claims in relation to premiums shall meet:</p> <ul style="list-style-type: none"> <li>(a) The originally filed anticipated loss ratio when combined with the actual experience since inception;</li> <li>(b) The appropriate loss ratio requirement from subdivisions 1 a and 1 b of this subsection when combined with actual experience beginning with July 1, 1991, to date; and</li> <li>(c) The appropriate loss ratio requirement from subdivisions 1 a and 1 b of this subsection over the entire future period for which the rates are computed to provide coverage.</li> </ul>		Not Applicable
Annual Rate and Experience Filing	14VAC5-170-120 C	<p>An issuer of Medicare supplement policies and certificates issued before or after July 30, 1992, in this Commonwealth shall file annually its rates, rating schedule, and supporting documentation including ratios of incurred losses to earned premiums by policy duration for approval by the State Corporation Commission in accordance with the filing requirements and procedures prescribed by the State Corporation Commission. The supporting documentation shall also demonstrate in accordance with actuarial standards of practice using reasonable assumptions that the appropriate loss ratio standards can be expected to be met over the entire period for which rates are computed. The demonstration shall exclude active life reserves. An expected third-year loss ratio which is greater than or equal to the applicable percentage shall be demonstrated for policies or certificates in force less than three years.</p>		Not Applicable
Actuarial Certification for Medicare Supplement Rate Revision Filings	14VAC5-170-120 C	<p>For annual rate and experience filings, an actuarial certificate by a qualified actuary that the best of the actuary's knowledge and judgment, the following items are true with respect to the filing as follows:</p> <ul style="list-style-type: none"> <li>1. The assumptions present the actuary's best judgment as to the reasonable value for each assumption and are consistent with the issuer's business plan at the time of the filing;</li> <li>2. The anticipated lifetime loss ratio, future loss ratios, and except for policies issued prior to July 30, 1992, third-year loss ratios all exceed the applicable ratio;</li> <li>3. Except for policies issued prior to July 30, 1992, the filed rates maintain the proper relationship between policies which had different rating methodologies;</li> <li>4. The filing was prepared based on the current standards of practices as promulgated by the Actuarial Standards Board, including the data quality standard of practice, as described at: <a href="http://www.actuary.org">www.actuary.org</a>;</li> <li>5. The filing is in compliance with the applicable laws and regulations in this Commonwealth; and</li> </ul>		Not Applicable

		6. The premiums are reasonable in relation to the benefits provided.		
Actuarial Certification for Medicare Supplement Rate Revision Filings	14VAC5-170-130 B	<p>For proposed rate changes, an actuarial certificate by a qualified actuary that to the best of the actuary's knowledge and judgment, the following items are true with respect to the filing as follows:</p> <ol style="list-style-type: none"> <li>1. The assumptions present the actuary's best judgment as to the reasonable value for each assumption and are consistent with the issuer's business plan at the time of the filing;</li> <li>2. The anticipated lifetime loss ratio, future loss ratios, and except for policies issued prior to July 30, 1992, third-year loss ratio all exceed the applicable ratio;</li> <li>3. The filing was prepared based on the current standards or practices as promulgated by the Actuary Standards Board including the data quality standard of practice as described at: <a href="http://www.actuary.org">www.actuary.org</a>;</li> <li>4. The filing is in compliance with applicable laws and regulations in this Commonwealth; and</li> <li>5. The premiums are reasonable in relation to the benefits provided.</li> </ol>		Not Applicable
Change in the Rating Structure or Methodology of a Medicare Supplement Form	14VAC5-170-130 D 3	<p>A change in the rating structure or methodology shall be considered a discontinuance under subdivision 1 of this subsection unless the issuer complies with the following requirements:</p> <ol style="list-style-type: none"> <li>(a) The issuer provides an actuarial memorandum, in a form and manner prescribed by the State Corporation Commission, describing the manner in which the revised rating methodology and resultant rates differ from the existing rating methodology and existing rates.</li> <li>(b) The issuer does not subsequently put into effect a change of rates or rating factors that would cause the percentage differential between the discontinued and subsequent rates as described in the actuarial memorandum to change.</li> </ol>		Not Applicable
For Coverage in the Individual and Small Group Health Insurance Markets Risk Pools and Index Rates	14VAC5-130-81 A & B	The claims experience of all enrollees in all health benefit plans are members of a single risk pool. <i>(Not applicable to grandfathered coverage).</i>		Not Applicable
	14VAC5-130-81 C	<p>Each plan year or policy year, as applicable, a health insurance issuer shall:</p> <ol style="list-style-type: none"> <li>1. Establish an index rate based on the total combined claim costs for providing essential health benefits within the single risk pool of the individual or small group market;</li> </ol>		Not Applicable

		<ol style="list-style-type: none"> <li>2. The index rate may be adjusted on a market-wide basis based on the total expected market-wide payments and charges under the risk adjustment and reinsurance programs in this Commonwealth and the health benefit exchange user fees, and</li> <li>3. The premium rate for all of the health insurance issuer's plans shall use the applicable index rate, as adjusted in accordance with subsection D of this section.</li> </ol>		
	14VAC5-130-81 D	<p>A health insurance issuer may vary premium rates for a particular plan from its index rate for a relevant state market based on the following actuarially justified plan-specified factors:</p> <ol style="list-style-type: none"> <li>1. The actuarial value and cost-sharing design on the plan.</li> <li>2. The plan's provider network, delivery system characteristics, and utilization management practices.</li> <li>3. The benefits provided under the plan that are in addition to the essential health benefits. These additional benefits shall be pooled with similar benefits within a single risk pool and the claims experience from those benefits shall be utilized to determine rate variations for plans that offer those benefits in addition to essential health benefits.</li> <li>4. Administrative costs, excluding health benefit exchange user fees.</li> <li>5. With respect to catastrophic plans, the expected impact of the specific eligibility categories for those plans.</li> </ol>		Not Applicable

I hereby certify that I have reviewed the attached rate review requirement filing and determined that\* it is in compliance with the rate review requirement checklist.

Signed: Missy Gordon

Name (please print): Missy Gordon

Company Name: Milliman, Inc.

Date: 8/30/2018 Phone No: (952) 820-2478 FAX No: (952) 897-5301

E-Mail Address: missy.gordon@milliman.com

\*to the best of my knowledge and belief



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**Actuarial Memorandum**

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<u>Product</u>	<u>Number</u>
200 Series Tax-Qualified Long-Term Care Policy Form	MM-200-P-VA et al.
300 Series Tax-Qualified Long-Term Care Policy Form	MM-300-P-VA et al.
400 Series Tax-Qualified Long-Term Care Policy Form	MM-400-P-VA et al.
500 Series Tax-Qualified Comprehensive Long-Term Care Policy Form	MM500-P-VA et al.
Tax-Qualified Facility Only Long-Term Care Policy Form	MM501-P-VA et al.
511 Series Tax-Qualified Comprehensive Long-Term Care Policy Form	MM500-P-1-VA et al.
Tax-Qualified Facility Only Long-Term Care Policy Form	MM501-P-1-VA et al.

Massachusetts Mutual Life Insurance Company (MassMutual) is requesting a rate increase on the above listed long-term care policy forms. The company issued these policy forms in Virginia between July 19, 2000 and October 17, 2013.

Nationwide, the company is requesting the same rate increase, except where required due to regulatory restrictions. The nationwide request captures all MassMutual long-term care products that are no longer being marketed in any jurisdiction, which includes the following five rate series: 200, 300, 400, 500, and 511. This actuarial memorandum captures the pooled experience of the above-listed policy forms and similar policy forms issued nationwide across the five rate series.

**1. Purpose of Filing**

This actuarial memorandum has been prepared for the purpose of demonstrating that the requested rate increase meets the minimum requirements of the 2014 National Association of Insurance Commissioners (NAIC) Long-Term Care Insurance Model Regulation (Model Regulation). The enclosed supplement to the actuarial memorandum demonstrates compliance with the applicable regulatory requirements of this jurisdiction to the extent they differ from the Model Regulation, and includes other commonly requested information of this jurisdiction. It may not be suitable for other purposes.

**2. Requested Rate Increase**

The company is requesting a premium rate increase to achieve a rate level consistent with that on its currently marketed 513 Series new business product. The resulting rate increase varies by rate series and all available options and riders. This rate increase is then capped on a seriatim basis such that no insured will receive a rate increase in excess of 100%. The company is seeking this rate increase request to help alleviate the adverse performance on this business.

The table below provides the distribution, range, and average requested rate increases for each series based on the nationwide distribution of business. The enclosed cover letter provides similar information based on the jurisdiction-specific distribution.

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**Actuarial Memorandum****August 30, 2018****Nationwide Rate Increase Request Distribution, Range, and Average Increase by Series<sup>[1]</sup>**

Rate Increase	All	200	300	400	500	511
0-10%	<1%	0%	<1%	<1%	1%	1%
11-20%	2	<1	<1	1	3	16
21-30%	5	1	<1	2	6	32
31-40%	8	1	1	3	11	40
41-50%	5	2	1	3	12	8
51-60%	5	2	2	4	11	2
61-70%	5	3	2	6	9	0
71-80%	4	4	3	5	7	0
81-90%	4	3	3	6	6	0
91-100%	61	84	88	71	33	0
Minimum	0	12	6	5	0	4
Maximum	100	100	100	100	100	59
Average	77	93	95	89	70	31

[1] As of December 31, 2016 and excludes policies assumed to be paid-up prior to the rate increase implementation date. The enclosed cover letter provides the jurisdiction-specific distribution.

While larger rate increases than requested are needed to alleviate the adverse performance on this business, at this time, the company does not anticipate additional rate increases beyond the current request; however, it will continue to monitor the business and reserves the right to request additional rate increases in the future.

Corresponding rate tables reflecting the current and proposed rates for policy forms affected by this rate increase are enclosed with this filing. The proposed rate tables reflect rate increases to bring the rates to a level consistent with that on the 513 Series new business rates. The rate increases will be implemented on a seriatim basis such that no insured will receive more than a 100% rate increase or a rate decrease. The enclosed rate tables do not capture any seriatim caps. The actual rates implemented may vary from those in the enclosed rate tables due to the seriatim caps and implementation rounding algorithms.

The renewal premium rate schedules, assuming the requested increase is implemented, are not greater than the 513 Series premium rate schedules, except for differences attributable to benefits.

**3. Description of Benefits**

The 200, 300, 400, 500, and 511 Series are existing tax-qualified policy forms that provide long-term care coverage. They are individually and jointly underwritten and provide comprehensive and facility only coverage on a reimbursement basis. Certain policy forms also included a rider to convert to coverage on an indemnity basis. These rate series have benefit eligibility requirements that involve activities of daily living (ADL) deficiencies or cognitive impairment. Waiver of premium is provided when certain benefits are being paid.

A daily benefit amount, benefit period, and elimination period were selected at issue. The available choices for benefit period and elimination period varied by rate series and are shown in Section 21 below.

At issue, the policyowner may have had the option to choose one of the following inflation options, the availability of which varied by rate series as shown in Section 21 below: no inflation, simple 5% inflation, compound 3% inflation, or compound 5% inflation. The simple inflation option provides for benefit levels that increase on each anniversary date by 5% of the daily benefit amount chosen at issue for the life of the insured. The compound inflation option provides for benefit levels that increase on each anniversary date by 3% or 5% compounded annually for the life of the insured. These automatic increasing benefits apply even when the insured is in claim status.

Premiums are paid for the life of the policy, unless the policyowner elected at issue a limited premium payment period, which varies by rate series as shown Section 21. An additional option was available

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for all premium payment periods in which the policyowner could pay a higher first year premium followed by discounted (reduced) renewal premium thereafter (a.k.a., discounted renewal).

At issue, the policyowner may have been offered the option of selecting riders (e.g., return of premium, shared care) that provide the types of coverage, which vary by rate series, as shown in the enclosed rate tables.

The 200, 300, and 400 Series (a.k.a., pre-500 business) offered joint coverage policies. Joint coverage provides equal coverage for two persons if both apply and are issued coverage under the policy. When one of the joint lives dies or exhausts their benefits or terminates, coverage continues for the remaining insured. The new premium rate will be the premium that would have been charged for an individual policy at the original issue age and risk class of the remaining insured.

The 500 and 511 Series (a.k.a., 500+ business) are participating policy forms. Explicit dividend margin was incorporated into the pricing for the 500+ business that was to be released to policyowners if experience emerged as originally expected in pricing. However, as emerging experience is worse than that expected with the dividend margin such that no dividends have been or are expected to be paid on these policy forms.

Most jurisdictions included Partnership-eligible policy forms or options for each rate series, subject to the individual Partnership requirements of each jurisdiction. Most jurisdictions issued the 200 Series under one policy form, but issued two sets of rates based on issue date. The first set of rates were originally priced in 2000 and the second was subsequently repriced in 2001, where the issue date range of each set is jurisdiction-specific.

A contingent benefit upon lapse (CBUL) will be available to all policyowners at the time of the rate increase.

**4. Renewability**

These policies are guaranteed renewable for life.

**5. Applicability**

This rate increase applies to all policies issued on these policy forms in this jurisdiction. The rate changes will apply to the premium of the base policy form and all associated options and riders.

**6. Actuarial Assumptions**

The following assumptions are used to project the experience shown in this filing.

- a. Morbidity reflects claim costs developed using the 2014 Milliman *Long-Term Care Guidelines (Guidelines)* with adjustments for underwriting selection and an all-lives exposure basis. The claim costs were further adjusted based on historical claim experience by rate series, attained age, policy duration, benefit period, benefit payment type, gender, and underwriting class, to the extent credible. These adjustment factors can be found in Exhibit A-3a of Appendix A to this memorandum.
- b. Mortality Rates reflect the 2012 Individual Annuity Mortality Basic gender-distinct table (2012IAM). The mortality rates were adjusted based on historical experience by attained age, policy duration, gender, underwriting class, and partner status, to the extent credible. These adjustment factors can be found in Exhibit A-1a of Appendix A to this memorandum.

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- c. Voluntary Lapse Rates vary by policy duration and partner status. The following table provides lapse rates for lifetime-payment policies.

Duration	Single	Partnered
1	4.00%	1.50%
2	5.50	2.50
3	3.50	2.00
4	3.00	1.50
5	2.50	1.20
6	2.00	0.90
7	1.75	0.70
8	1.25	0.60
9+	0.90	0.50

The lapse rates in the above table were adjusted based on the following criteria for the additional premium payment options:

- For the ten-pay option, a reduction of 50% of the above lapse rates is assumed for durations one through eight, and 0% lapse thereafter.
- For the twenty-pay option, a reduction of 25% of the above lapse rates is assumed for durations one through fifteen, and 0% lapse thereafter.
- For the paid-up at age 65 option, a reduction of 25% of the above lapse rates is assumed for all durations with issue ages 60 and lower, and 0% lapse for all durations with issue ages greater than 60.
- For the discounted renewal option, a reduction of 25% of the above lapse rates is assumed for all durations.

- d. Benefit Expiry Rates reflect assumed policy termination due to exhaustion of benefits on limited benefit period policies. The rates are based on the *Guidelines* and vary by gender, benefit period, and attained age as shown in the following table.

Gender	Benefit Period in Years	Attained Age*										
		<65	65	70	75	80	85	90	95	100	105	110+
Female	2	0.0%	0.0%	0.1%	0.2%	0.4%	1.2%	3.1%	6.1%	9.1%	14.6%	20.0%
	3	0.0	0.0	0.1	0.1	0.3	0.8	2.2	4.7	7.5	14.1	20.0
	4	0.0	0.0	0.0	0.1	0.2	0.6	1.5	3.3	5.7	12.4	20.0
	5	0.0	0.0	0.0	0.1	0.1	0.4	1.1	2.4	4.5	10.1	20.0
	6	0.0	0.0	0.0	0.0	0.1	0.3	0.9	2.1	3.9	7.7	20.0
	10	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.4	0.9	1.9	20.0
	Lifetime	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Male	2	0.0	0.0	0.1	0.1	0.3	0.7	1.8	3.3	4.7	7.4	20.0
	3	0.0	0.0	0.0	0.1	0.2	0.4	1.1	2.2	3.5	6.5	20.0
	4	0.0	0.0	0.0	0.0	0.1	0.3	0.7	1.5	2.5	5.4	20.0
	5	0.0	0.0	0.0	0.0	0.1	0.2	0.5	1.1	2.0	4.5	20.0
	6	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.9	1.9	3.6	20.0
	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.9	20.0
	Lifetime	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

\* The assumption varies by attained age, but is shown every five years for display purposes.

- e. Insured Behavior Due to the Rate Increase. At the time of a rate increase, insureds have the option to elect a CBUL or reduced benefit options (RBO). An increase in morbidity for adverse selection due to the rate increase based on the percentage of insureds that elect CBUL and RBO is assumed.

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Insureds who elect a CBUL are modeled as a lapse (i.e., the CBUL benefit is not modeled), which results in a slightly lower lifetime loss ratio than if the CBUL benefit had been modeled.

CBUL and RBO election are functions of rate increase magnitude. Adverse selection associated with the requested increase is a function of CBUL and RBO election. The following provides approximate averages for these assumptions based on the nationwide distribution for all rate series combined: 5% CBUL election rate, 13% RBO election rate, and 3% morbidity increase due to adverse selection.

- f. Interest Rate consistent with the maximum valuation interest rate applicable to the year of issue (ranges from 3.5% to 4.5% and averages 4.1%) is used to demonstrate compliance with the minimum loss ratio requirements.
- g. Annual Improvement is assumed for 10 future years in the mortality and morbidity assumptions. Annual improvement factors vary by attained age based on the G2 improvement scale from the 2012IAM table.
- h. Expenses have not been explicitly projected. Originally filed expense assumptions are assumed to remain appropriate, except that commissions are not paid on the increased premium.
- i. Dividends are not projected in the current experience as the company has not historically paid a dividend and does not anticipate paying a dividend in the future on its long-term care business for the 500+ business.

The above assumptions are based on the experience of policies issued by MassMutual, industry experience, and actuarial judgment. These assumptions are based on the nationwide experience of all long-term care business issued by MassMutual, which includes the 200, 300, 400, 500, 511, and 513 Series. In developing the persistency assumptions, policy termination experience through December 31, 2016 was used. For the morbidity assumption, claim experience through December 31, 2016 with claim runout through December 31, 2017 was used. The above assumptions are deemed reasonable for the particular policy forms in this filing and are considered "most likely" (without explicit margin).

In establishing the assumptions described in this section, the policy design, underwriting, and claims adjudication practices for the above-referenced policy forms were taken into consideration. Appendix A to this memorandum provides a description of the development of and justification for the assumptions used in this filing.

The company is currently marketing one long-term care product, the 513 Series, in this jurisdiction. A comparison of the projection assumptions used in this filing and those used for pricing the 513 Series product is included in Appendix B to this memorandum.

**7. Marketing Method**

These policy forms were marketed by agents of MassMutual and/or by independent brokers.

**8. Underwriting Description**

These policies were individually underwritten with the use of various underwriting tools in addition to the application, which may have included medical records, paramedical functional assessments, cognitive screenings, face-to-face interviews, and/or attending physician statements.

**9. Premiums**

Premiums are unisex and payable for life unless the insured selected a limited premium payment period option. The premiums may vary by policy form, issue age, elimination period, benefit period, initial daily

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benefit amount, inflation option, premium payment option, underwriting class, joint status, discounts (e.g., partner status at issue), home care coverage, and the selection of any riders.

**10. Issue Age Range**

Issue ages are from 18 to 84.

**11. Area Factors**

Area factors are not used for these products.

**12. Premium Modalization Rules**

The following modal factors and percent distributions (based on the nationwide in-force insured count as of December 31, 2016) are applied to the annual premium (AP):

Premium Mode	Modal Factors	Percent Distribution
Annual	1.000*AP	44%
Semi-Annual	0.520*AP	4
Quarterly <sup>[1]</sup>	0.265*AP	9
Monthly <sup>[1]</sup>	0.088*AP	43

*[1] Factor may vary based on policy form and payment option.*

**13. Reserves**

Active life reserves and reserves for the election of a CBUL have not been used in the experience exhibits for this rate increase analysis. As described in the supplement to this actuarial memorandum, changes in active life reserve balances are provided as required. Claim reserves as of December 31, 2017 have been discounted to the incurrance date of each respective claim and included in historical incurred claims. Incurred but not reported (IBNR) reserves have not been used as the incurred claims include paid claim runout through December 31, 2017.

**14. Trend Assumptions**

As this is not medical insurance, an explicit medical cost trend is not included in the projections.

**15. Demonstration of Satisfaction of Loss Ratio Requirements**

This filing uses nationwide experience of all policies of the 200, 300, 400, 500, and 511 Series. This pooled experience captures all MassMutual long-term care products that are no longer being marketed in any jurisdiction. Pooling these forms' experience is appropriate as the rate increase request brings the pool to a consistent rate basis (i.e., 513 Series new business product), the policy forms have similar benefits, it is consistent with how MassMutual manages the business, and combining experience increases credibility.

Exhibit I provides actual and projected experience using current assumptions. Actual experience is provided from inception through 2016 (with claim runout through 2017) and then projected on a seriatim basis for 60 years using the current assumptions described above in Section 6. The actual and projected experience is based on nationwide premiums. The after increase projected experience reflects the requested increase by series (shown in Section 2) on a seriatim basis.

Values in Exhibit I are shown (a) before and (b) after the requested rate increase. Included are calendar year earned premiums, incurred claims, end of year lives, annual loss ratios, and cumulative

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loss ratios. As shown in Exhibit I, the anticipated lifetime loss ratio with the requested rate increase exceeds the minimum loss ratio required by pre-rate stability regulation.

The following table demonstrates that the lifetime loss ratios by series also exceed the minimum loss ratio required by pre-rate stability regulation. The 'All' row corresponds to that shown in Exhibit I.

**Lifetime Loss Ratios at the Maximum Valuation Interest Rate by Series**

Series	Before Increase	After Increase
All	161%	119%
200	188	141
300	196	146
400	157	113
500	121	89
511	95	79

Exhibit II provides a demonstration that the requested rate increase meets the 58%/85% minimum loss ratio test under moderately adverse conditions as required by post-rate stability regulation. This exhibit shows that the sum of the accumulated value of incurred claims without the inclusion of active life reserves, and the present value of projected incurred claims, without the inclusion of active life reserves, will not be less than the sum of the following:

1. Accumulated value of the initial earned premium times 58%,
2. 85% of the accumulated value of prior premium rate schedule increases,
3. Present value of projected initial earned premium times 58%, and
4. 85% of the present value of projected premium in excess of the projected initial earned premium.

The following table demonstrates that the 58%/85% test is passed by series. The 'All' row corresponds to that shown in Exhibit II. Values in the table are shown in millions of dollars.

**58%/85% Test by Series (\$ in millions)**

Series	Item 5 <sup>[1]</sup>	Item 7 <sup>[2]</sup>	Result <sup>[3]</sup>
All	\$3,355	\$7,245	Pass
200	821	2,119	Pass
300	730	1,945	Pass
400	743	1,516	Pass
500	817	1,307	Pass
511	244	358	Pass

*[1] Item 5 is the Lifetime Earned Premium Times Prescribed Factor.*

*[2] Item 7 is Lifetime Incurred Claims with Rate Increase.*

*[3] Test of whether Item 7 is not less than Item 5.*

**16. Actual-to-Expected Experience**

The following table provides a comparison of actual and projected experience using current assumptions to that expected using original pricing assumptions. Values in the following table are shown (a) before and (b) after the requested rate increase.

**MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY****Address:** 1295 State Street, Springfield, MA 01111**Actuarial Memorandum****August 30, 2018****Actual and Expected Loss Ratios by Series**

Series	Lifetime Loss Ratio			Actual-to-Expected	
	Before Increase <sup>[1]</sup>	After Increase <sup>[1]</sup>	Expected <sup>[2]</sup>	Before Increase	After Increase
All	146%	109%	57%	2.58	1.92
200	171	129	54	3.15	2.39
300	177	133	56	3.14	2.35
400	129	95	54	2.39	1.76
500	121	89	58	2.10	1.54
511	95	79	69	1.38	1.15

*[1] Using current interest assumption on a basis that is consistent with original pricing, which may differ from that used in Exhibit I, as described below.*

*[2] Projected actual policies sold from issue using original pricing assumptions.*

Actual and projected experience in the above table is identical to that described in Exhibit I, except uses a current interest assumption on a basis that is consistent with original pricing. For the pre-500 business, original pricing used an earnings interest rate basis; a current earnings interest rate assumption of 5.0% is used in this table. For the 500+ business, original pricing used a valuation interest rate basis, so a current maximum valuation interest rate assumption as described above in Section 6 (which is also consistent with that used in Exhibit I) is used in this table.

Expected experience uses the actual policies sold and projects from issue on a seriatim basis using the original pricing assumptions for each series. Consistent with the original pricing projections, the expected experience based on original pricing assumptions includes an adjustment for dividend margin assumed in pricing for the 500+ business.

Exhibit III provides a comparison of the current and original pricing assumptions that underlie the actual and expected experience described above.

**17. History of Previous Rate Revisions**

No prior rate increases have been implemented on these products.

**18. Analysis Performed to Consider a Rate Increase**

The experience table in Section 16 above demonstrates that experience has been more adverse from that expected using original pricing assumptions as the actual-to-expected (A:E) loss ratios exceed 1.0. The adverse experience for all rate series combined is largely driven by higher than expected persistency and morbidity.

The following table provides a comparison of actual and projected nationwide experience for all rate series combined to that expected in pricing with respect to interest, lapse (combination of voluntary lapse and benefit expiry), mortality, morbidity, and improvement. The current and original pricing assumptions are provided in Exhibit III.



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**Impact of Changing from Pricing to Current Assumptions**

<b>Scenario</b>	<b>Lifetime Loss Ratio (LLR)</b>	<b>Incremental Impact on the LLR<sup>[1]</sup></b>	<b>Increase Needed<sup>[2]</sup></b>
Original pricing assumptions	57%	N/A	N/A
Historical experience through 2016 & projections with pricing assumptions <sup>[3]</sup>	62	10%	35%
Historical experience through 2016 & projections with pricing assumptions except for current:			
Interest	68	10	33
Interest, lapse	76	12	38
Interest, lapse, mortality	108	41	120
Interest, lapse, mortality, morbidity	151	41	117
Interest, lapse, mortality, morbidity, improvement	146	-3	-10
Historical experience through 2016 & projections with all current most-likely assumptions <sup>[4]</sup>	146	158	444

*[1] Calculated as the ratio of the lifetime loss ratio in a given row to that in the row immediately above it less one.*

*[2] Shows the rate increase needed to reproduce the lifetime loss ratio in the row immediately above it. Calculated without regard to CBUL, RBO, adverse selection, and higher waiver claims due to the needed rate increase.*

*[3] This row reflects actual historical experience and pricing assumptions projected from the valuation date. For participating rate series (500+), the explicit dividend margin assumed in pricing was removed (reduces the lifetime loss ratio) as no dividends have been or are expected to be paid on these policy forms.*

*[4] This row is calculated in regards to the pricing lifetime loss ratio of 57%.*

For the business subject to rate stability regulation, an analysis of the projected loss ratio compared to that assumed at the time of original pricing revealed that experience has unfolded more than moderately adverse and crossed the original pricing threshold for which the company could consider a rate increase.

Based on our understanding of the available original pricing materials and actuarial judgment, the assumed original pricing threshold before which a rate increase may be considered is a 10% increase in the original pricing lifetime loss ratio for the pre-500 Series, a 13% increase for the 500 Series, and a 14% increase for the 511 Series. Section 15 demonstrates that the lifetime loss ratios are well in excess of this assumed original pricing threshold. That is, the before increase A:E exceeds 1.10 for the pre-500 Series, 1.13 for the 500 Series, and 1.14 for the 511 Series.

**19. Average Annual Premium in Virginia (Based on December 31, 2016 In-Force<sup>[1]</sup>)**

The number of insureds and the corresponding average annual premium that will be affected by this rate increase filing are:

<b>Rate Series</b>	<b>Number of Insureds</b>	<b>Before Increase Premium</b>	<b>After Increase Premium</b>
200 Series	1,227	\$1,574	\$3,063
300 Series	1,198	1,841	3,626
400 Series	989	2,353	4,511
500 Series	1,015	3,103	5,340
511 Series	307	3,085	4,105
All	4,736	2,230	4,063

*[1] Excludes policies assumed to be paid up prior to implementation of the requested rate increase.*

**20. Proposed Effective Date**

This rate increase will apply to policies on their next policy anniversary date following at least a 90-day policyowner notification period following disposition of this filing by the department of insurance.

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**21. Distribution of Business as of December 31, 2016 (Based on Nationwide In-Force Insured Count)**

<b>Issue Ages</b>	<b>Percent Distribution</b>					
	<b>All</b>	<b>200</b>	<b>300</b>	<b>400</b>	<b>500</b>	<b>511</b>
<40	2%	1%	2%	2%	2%	3%
40-44	4	4	5	5	4	5
45-49	11	10	13	11	9	9
50-54	23	22	24	25	20	21
55-59	30	29	31	29	29	25
60-64	20	21	18	19	24	23
65-69	8	9	6	7	10	12
70-74	2	3	1	2	2	2
75-79	<1	1	<1	<1	<1	<1
80+	<1	<1	<1	<1	<1	0
Average Issue Age	56	56	56	55	57	56

<b>Elimination Period</b>	<b>Percent Distribution</b>					
	<b>All</b>	<b>200</b>	<b>300</b>	<b>400</b>	<b>500</b>	<b>511</b>
0-Day	1%	2%	1%	1%	N/A	N/A
30-Day	8	13	12	6	3	2
60-Day	4	4	4	4	3	2
90-Day	83	81	79	83	87	91
180-Day	4	<1	4	6	7	5

<b>Benefit Period</b>	<b>Percent Distribution</b>					
	<b>All</b>	<b>200</b>	<b>300</b>	<b>400</b>	<b>500</b>	<b>511</b>
2 Years	2%	N/A	N/A	N/A	5%	5%
3 Years	14	14	8	9	20	29
4 Years	6	N/A	5	3	12	13
5 Years	8	N/A	N/A	6	24	20
6 Years	10	11	8	6	9	24
10 Years	2	N/A	N/A	3	4	1
Lifetime	58	75	79	73	26	8

<b>Inflation Option</b>	<b>Percent Distribution</b>					
	<b>All</b>	<b>200</b>	<b>300</b>	<b>400</b>	<b>500</b>	<b>511</b>
None	10%	11%	6%	12%	11%	11%
Simple 5%	30	38	32	35	25	N/A
Compound 3%	10	N/A	N/A	N/A	15	72
Compound 5%	50	51	62	53	49	17

<b>Premium Payment Duration</b>	<b>Percent Distribution</b>					
	<b>All</b>	<b>200</b>	<b>300</b>	<b>400</b>	<b>500</b>	<b>511</b>
Ten-Pay	13%	10%	18%	16%	12%	5%
Twenty-Pay	1	1	1	1	N/A	N/A
Pay to Age 65	<1	N/A	N/A	N/A	2	1
Lifetime-Pay	86	89	81	83	86	94

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Discounted Renewal Premium Payment Option	Option Election Rate					
	All	200	300	400	500	511
	4%	5%	5%	7%	1%	<1%

Coverage Type	Percent Distribution					
	All	200	300	400	500	511
Facility Only	1%	2%	1%	1%	2%	1%
Comprehensive	99	98	99	99	98	99

Benefit Type	Percent Distribution					
	All	200	300	400	500	511
Indemnity	29%	22%	45%	46%	19%	N/A
Reimbursement	71	78	55	54	81	100%

Underwriting Class <sup>[1]</sup>	Percent Distribution					
	All	200	300	400	500	511
Preferred	59%	75%	61%	58%	48%	42%
Standard	35	21	34	37	44	47
Substandard	6	4	5	5	8	11

<sup>[1]</sup> At issue, the labels may have differed, but were grouped into these three generic labels.

**22. Number of Insureds and Annualized Premium (Based on December 31, 2016 In-Force<sup>[1]</sup>)**

The number of insureds and annualized premium that will be affected by this rate increase filing in Virginia are:

Series	Number of Insureds	Annualized Premium
<b>Issued in Virginia Prior to 10/1/2003</b>		
200	1,175	\$1,864,849
300	22	42,241
400	0	0
500	0	0
511	0	0
Total	1,197	1,907,090
<b>Issued in Virginia On or After 10/1/2003</b>		
200	52	\$66,846
300	1,176	2,163,777
400	989	2,327,049
500	1,015	3,149,105
511	307	947,132
Total	3,539	8,653,909

<sup>[1]</sup> Excludes policies assumed to be paid up prior to implementation of the requested rate increase.

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The number of insureds and annualized premium that will be affected by this rate increase filing nationwide are:

Series	Number of Insureds	Annualized Premium
<b>Issued Nationwide Prior to 10/1/2003</b>		
200	14,892	\$24,271,231
300	1,529	2,662,829
400	0	0
500	0	0
511	0	0
Total	16,421	26,934,060
<b>Issued Nationwide On or After 10/1/2003</b>		
200	3,285	\$6,171,622
300	12,705	24,057,820
400	12,294	30,219,392
500	18,208	57,728,588
511	6,605	19,167,127
Total	53,097	137,344,548

*[1] Excludes policies assumed to be paid up prior to implementation of the requested rate increase.*

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**23. Actuarial Certification**

I am a Principal and Consulting Actuary for Milliman, Inc. and retained by MassMutual to render an opinion with regard to long-term care insurance rates. I am a member of the American Academy of Actuaries. I meet the Academy's qualification standards to render this actuarial opinion and am familiar with the requirements for filing long-term care insurance premiums and rate increases.

This memorandum has been prepared in conformity with all applicable Actuarial Standards of Practice, including Actuarial Standards of Practice No. 8, "Regulatory Filings for Health Benefits, Accident and Health Insurance, and Entities Providing Health Benefits" and 18, "Long-Term Care Insurance".

I hereby certify that, to the best of my knowledge and judgment, this rate submission is in compliance with the applicable laws and regulations of this jurisdiction and the rules of the department of insurance, including the provisions of 14VAC5-200-150 and 14VAC5-200-153.

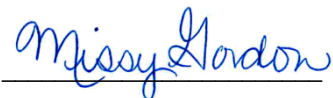
In my opinion, the rates are not excessive or unfairly discriminatory, and bear reasonable relationship to the benefits based on the loss ratio standards of this jurisdiction.

This filing will enhance premium adequacy, but may not be sufficient to prevent future rate action. Additional rate increases are needed to certify that rates will remain stable under moderately adverse conditions.

In forming my opinion, I have used actuarial assumptions and actuarial methods (which gave consideration to policy design, underwriting, and claim adjudication) and such tests of the actuarial calculations as I considered necessary. Based on these assumptions, or statutory requirements where necessary, the premium rate filing is in compliance with the loss ratio standards of this jurisdiction.

I have relied on data and information provided by MassMutual and its third party administrator to develop this memorandum, including but not limited to management's view of when a rate change may be considered, policy design, underwriting and claim adjudication process, seriatim in-force data, claim data, dividend expectation, and the company's long-term earnings rate. I have not audited or independently verified the data and information provided, but have reviewed it for reasonableness.

The basis for contract reserves has been previously filed and there is no anticipation of any changes.



Missy Gordon, FSA, MAAA  
Principal and Consulting Actuary

Date: August 30, 2018

**Exhibit I-a**  
**Massachusetts Mutual Life Insurance Company**  
**Actual and Projected Experience by Calendar Year**  
**Nationwide Experience Before Requested Rate Increase**  
**All Rate Series Combined**

	Calendar Year	Actual or Projected Experience using Current Assumptions				Cumulative Loss Ratio with interest
		A Earned Premium	B Incurred Claims	C = B / A Incurred Loss Ratio	D End of Year Lives	E Actual (Column C) with Max. Val. Interest
Historical Experience	2000	613,240	0	0%	1,775	0%
	2001	8,395,491	64,652	1%	7,642	1%
	2002	21,414,123	527,514	2%	15,522	2%
	2003	38,423,209	1,663,767	4%	24,571	3%
	2004	58,600,776	1,499,223	3%	34,074	3%
	2005	88,587,224	5,917,061	7%	45,088	4%
	2006	108,266,631	4,124,523	4%	50,082	4%
	2007	121,895,279	9,601,387	8%	54,405	5%
	2008	137,228,636	9,464,000	7%	58,834	6%
	2009	146,783,646	14,396,475	10%	61,275	6%
	2010	157,044,149	18,532,382	12%	64,748	7%
	2011	170,045,482	18,642,615	11%	70,309	8%
	2012	193,342,609	23,728,913	12%	77,353	8%
	2013	201,251,429	26,201,269	13%	79,455	9%
	2014	196,209,517	34,432,838	18%	78,588	10%
	2015	183,819,465	40,611,186	22%	77,807	11%
	2016	174,917,980	38,574,940	22%	77,020	12%
Projected Future Experience	2017	172,241,693	54,502,773	32%	75,896	13%
	2018	165,047,886	64,573,658	39%	74,783	14%
	2019	159,193,087	76,343,329	48%	73,661	16%
	2020	153,983,243	89,588,731	58%	72,510	17%
	2021	147,746,139	104,201,577	71%	71,315	19%
	2022	137,446,581	120,433,978	88%	70,064	22%
	2023	132,732,324	138,582,927	104%	68,748	24%
	2024	129,872,384	158,883,088	122%	67,363	26%
	2025	126,757,990	181,614,373	143%	65,906	29%
	2026	123,622,884	206,607,058	167%	64,374	32%
	2027	120,368,173	235,581,471	196%	62,755	35%
	2028	116,967,040	269,002,445	230%	61,041	39%
	2029	113,456,899	305,504,461	269%	59,228	43%
	2030	109,825,829	344,664,339	314%	57,316	47%
	2031	106,008,521	386,163,349	364%	55,304	51%
	2032	101,998,825	429,058,224	421%	53,195	56%
	2033	97,852,727	473,046,524	483%	50,994	61%
	2034	93,538,391	517,519,441	553%	48,705	66%
	2035	89,062,425	560,960,575	630%	46,338	71%
	2036	84,436,790	602,251,794	713%	43,902	76%
	2037	79,713,710	640,558,320	804%	41,411	82%
	2038	74,897,097	675,013,035	901%	38,880	87%
	2039	70,011,512	704,314,318	1,006%	36,326	93%
	2040	65,100,920	727,055,899	1,117%	33,766	99%
	2041	60,193,802	742,866,216	1,234%	31,221	104%
	2042	55,333,340	751,591,594	1,358%	28,709	109%
	2043	50,562,872	753,035,208	1,489%	26,251	114%
	2044	45,918,427	747,286,278	1,627%	23,864	119%
	2045	41,436,080	734,525,898	1,773%	21,566	124%
	2046	37,149,904	715,189,527	1,925%	19,373	128%
	2047	33,089,359	689,963,515	2,085%	17,298	132%
	2048	29,278,136	659,215,478	2,252%	15,351	136%
	2049	25,733,967	624,218,429	2,426%	13,540	139%
	2050	22,468,351	585,694,514	2,607%	11,871	142%
	2051	19,487,186	545,003,489	2,797%	10,344	145%
	2052-2056	62,359,938	2,096,396,469	3,362%	33,661	154%
	2057-2061	25,527,035	1,172,994,097	4,595%	14,417	158%
	2062-2066	9,257,249	561,639,676	6,067%	5,517	160%
	2067-2071	3,137,808	234,707,490	7,480%	1,949	161%
	2072-2076	1,014,695	85,792,699	8,455%	651	161%

**With Interest Accum./Disc. To 12/31/2016**

History	2,606,149,452	300,048,738	12%
Future	2,054,217,459	7,196,453,881	350%
Lifetime	4,660,366,911	7,496,502,619	161%

**Exhibit I-b**  
**Massachusetts Mutual Life Insurance Company**  
**Actual and Projected Experience by Calendar Year**  
**Nationwide Experience After Requested Rate Increase**  
**All Rate Series Combined**

	Calendar Year	Actual or Projected Experience using Current Assumptions				Cumulative Loss Ratio with interest
		A Earned Premium	B Incurred Claims	C = B / A Incurred Loss Ratio	D End of Year Lives	E Actual (Column C) with Max. Val. Interest
Historical Experience	2000	613,240	0	0%	1,775	0%
	2001	8,395,491	64,652	1%	7,642	1%
	2002	21,414,123	527,514	2%	15,522	2%
	2003	38,423,209	1,663,767	4%	24,571	3%
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	2005	88,587,224	5,917,061	7%	45,088	4%
	2006	108,266,631	4,124,523	4%	50,082	4%
	2007	121,895,279	9,601,387	8%	54,405	5%
	2008	137,228,636	9,464,000	7%	58,834	6%
	2009	146,783,646	14,396,475	10%	61,275	6%
	2010	157,044,149	18,532,382	12%	64,748	7%
	2011	170,045,482	18,642,615	11%	70,309	8%
	2012	193,342,609	23,728,913	12%	77,353	8%
	2013	201,251,429	26,201,269	13%	79,455	9%
	2014	196,209,517	34,432,838	18%	78,588	10%
	2015	183,819,465	40,611,186	22%	77,807	11%
	2016	174,917,980	38,574,940	22%	77,020	12%
Projected Future Experience	2017	172,241,693	54,502,773	32%	75,896	13%
	2018	165,047,886	64,573,658	39%	74,783	14%
	2019	193,905,673	69,864,427	36%	69,593	15%
	2020	219,884,359	74,797,204	34%	68,507	16%
	2021	209,608,788	86,868,963	41%	67,380	18%
	2022	192,251,573	100,252,490	52%	66,200	19%
	2023	185,256,046	115,223,460	62%	64,959	21%
	2024	181,165,775	131,965,598	73%	63,654	22%
	2025	176,650,552	150,706,199	85%	62,280	24%
	2026	172,174,308	171,313,984	100%	60,835	26%
	2027	167,573,253	195,218,527	116%	59,310	29%
	2028	162,766,675	222,801,144	137%	57,693	31%
	2029	157,844,724	252,934,816	160%	55,984	34%
	2030	152,798,932	285,289,591	187%	54,182	37%
	2031	147,499,211	319,603,964	217%	52,285	40%
	2032	141,934,047	355,112,169	250%	50,298	43%
	2033	136,199,570	391,578,105	288%	48,223	47%
	2034	130,229,439	428,512,082	329%	46,065	50%
	2035	124,031,369	464,671,676	375%	43,834	54%
	2036	117,615,741	499,147,320	424%	41,537	58%
	2037	111,075,348	531,236,282	478%	39,188	62%
	2038	104,402,975	560,226,140	537%	36,801	66%
	2039	97,626,961	585,041,762	599%	34,391	70%
	2040	90,813,881	604,503,781	666%	31,976	74%
	2041	83,998,197	618,268,543	736%	29,574	78%
	2042	77,243,782	626,199,721	811%	27,203	81%
	2043	70,608,758	628,123,912	890%	24,881	85%
	2044	64,143,595	624,119,494	973%	22,627	88%
	2045	57,898,999	614,301,538	1,061%	20,456	92%
	2046	51,922,915	598,999,614	1,154%	18,383	95%
	2047	46,256,958	578,751,855	1,251%	16,421	98%
	2048	40,934,871	553,860,871	1,353%	14,580	100%
	2049	35,982,176	525,379,988	1,460%	12,866	103%
	2050	31,415,738	493,889,217	1,572%	11,285	105%
	2051	27,244,607	460,485,896	1,690%	9,839	107%
	2052-2056	87,099,966	1,782,225,558	2,046%	32,070	114%
	2057-2061	35,505,612	1,008,831,723	2,841%	13,781	117%
	2062-2066	12,782,679	488,059,780	3,818%	5,290	119%
	2067-2071	4,292,602	205,074,360	4,777%	1,874	119%
	2072-2076	1,372,527	74,896,024	5,457%	627	119%

**With Interest Accum./Disc. To 12/31/2016**

History	2,606,149,452	300,048,738	12%
Future	2,714,409,444	6,039,206,031	222%
Lifetime	5,320,558,896	6,339,254,769	119%

**Exhibit II**  
**Demonstration that the Requested Rate Increase Passes the 58%/85% Loss Ratio Minimum**  
**Massachusetts Mutual Life Insurance Company**  
**All Rate Series Combined Nationwide Experience**

1	Accumulated value of initial earned premium	2,606,149,452	x	58%	=	1,511,566,682
2a	Accumulated value of earned premium	2,606,149,452				
2b	Accumulated value of prior premium rate schedule increases (2a - 1)	0	x	85%	=	0
3	Present value of future projected initial earned premium	1,718,816,688	x	58%	=	996,913,679
4a	Present value of future projected premium	2,714,409,444				
4b	Present value of future projected premium in excess of the projected initial earned premiums (4a - 3)	995,592,757	x	85%	=	846,253,843
<b>5</b>	<b>Lifetime Earned Premium Times Prescribed Factor: Sum of 1, 2b, 3, and 4b</b>					<b>3,354,734,204</b>
6a	Accumulated value of incurred claims without the inclusion of active life reserves					300,048,738
6b	Present value of future projected incurred claims without the inclusion of active life reserves					6,945,086,935
<b>7</b>	<b>Lifetime Incurred Claims with Rate Increase: Sum 6a and 6b</b>					<b>7,245,135,673</b>
8	Test: 7 is not less than 5					Pass
<p><i>Items 2a, 4a, and 6a are consistent with the accumulated and present values shown in Exhibit I-b.</i></p> <p><i>All accumulated or present values use the maximum valuation interest rate for contract reserves applicable for the year of issue, which ranges from 3.5% to 4.5%.</i></p> <p><i>Item 3 reflects the impact of CBUL and RBO to align persistency with that in Item 4a.</i></p> <p><i>Item 6b is 15% higher than incurred claims shown in Exhibit I-b to reflect moderately adverse conditions.</i></p>						



**Exhibit III**  
**Massachusetts Mutual Life Insurance Company**  
**Comparison of Current and Original Pricing Assumptions**

Morbidity	
Current Assumptions	All
Original Assumptions	200 Series 300 Series 400 Series
500 Series	
511 Series	

Morbidity															
Claim costs are developed using the 2014 Milliman <i>Long-Term Care Guidelines (Guidelines)</i> with adjustments for underwriting selection and an all-lives exposure basis. The claim costs were further adjusted based on historical claim experience by rate series, attained age, policy duration, benefit period, benefit payment type, gender, and underwriting class, to the extent credible. An exhibit containing the adjustment factors is provided in Appendix A to the actuarial memorandum.															
Claim costs were developed using The Reports of the Society of Actuaries and actuarial judgment. The following are durational morbidity factors:															
<table><tr><th>Duration</th><th>Factor</th></tr><tr><td>1</td><td>0.10</td></tr><tr><td>2</td><td>0.20</td></tr><tr><td>3</td><td>0.40</td></tr><tr><td>4</td><td>0.60</td></tr><tr><td>5</td><td>0.80</td></tr><tr><td>6+</td><td>1.00</td></tr></table>	Duration	Factor	1	0.10	2	0.20	3	0.40	4	0.60	5	0.80	6+	1.00	
Duration	Factor														
1	0.10														
2	0.20														
3	0.40														
4	0.60														
5	0.80														
6+	1.00														
Claim costs were developed starting with the 400 Series claim costs and were modified based on experience of the company's reinsurance carrier.															
The morbidity assumption was derived using industry experience as reported in the Intercompany Study 1984-2004 published by the Society of Actuaries Long Term Care Experience Committee (2004 Study) and adjusted, to the extent credible, by the aggregate experience of the company's reinsurer.															

Mortality	
Current Assumptions	All
Original Assumptions	200 Series 300 Series 400 Series
	500 Series
	511 Series

Mortality	
Mortality Rates reflect the 2012 Individual Annuity Mortality Basic gender-distinct table (2012IAM). The mortality rates were adjusted based on historical experience by attained age, policy duration, gender, underwriting class, and partner status, to the extent credible. An exhibit containing the adjustment factors is provided in Appendix A to the actuarial memorandum.	
1975-80 Select and Ultimate mortality table.	
1994 Group Annuity Mortality (GAM) Static gender-distinct table.	
80% of Annuity 2000 (A2000) Mortality table is used for active lives along with underwriting selection. Disabled Life Mortality is assumed to be the lesser of the claim termination rate and a multiple of the active mortality rate. The multiple varies by claim termination age. For claim termination ages less than or equal to 75, the multiple is 20.0. For claim termination ages greater than 90, the multiple is 5.0. The multiple grades linearly from ages 75 to 90.	
A2000 Mortality table is used for active lives along with adjustments by attained age and gender. The disabled mortality assumption is derived using industry experience as reported in the 2004 Study.	

**Exhibit III**  
**Massachusetts Mutual Life Insurance Company**  
**Comparison of Current and Original Pricing Assumptions**

Current Assumptions	All	Lapse Rates																																			
		Voluntary lapse rates (excludes benefit expiry) vary by policy duration and partner status.																																			
		<table><tr><th colspan="3">Lifetime-Payment Lapse Rates</th></tr><tr><th>Duration</th><th>Single</th><th>Partnered</th></tr><tr><td>1</td><td>4.00%</td><td>1.50%</td></tr><tr><td>2</td><td>5.50%</td><td>2.50%</td></tr><tr><td>3</td><td>3.50%</td><td>2.00%</td></tr><tr><td>4</td><td>3.00%</td><td>1.50%</td></tr><tr><td>5</td><td>2.50%</td><td>1.20%</td></tr><tr><td>6</td><td>2.00%</td><td>0.90%</td></tr><tr><td>7</td><td>1.75%</td><td>0.70%</td></tr><tr><td>8</td><td>1.25%</td><td>0.60%</td></tr><tr><td>9+</td><td>0.90%</td><td>0.50%</td></tr></table>			Lifetime-Payment Lapse Rates			Duration	Single	Partnered	1	4.00%	1.50%	2	5.50%	2.50%	3	3.50%	2.00%	4	3.00%	1.50%	5	2.50%	1.20%	6	2.00%	0.90%	7	1.75%	0.70%	8	1.25%	0.60%	9+	0.90%	0.50%
Lifetime-Payment Lapse Rates																																					
Duration	Single	Partnered																																			
1	4.00%	1.50%																																			
2	5.50%	2.50%																																			
3	3.50%	2.00%																																			
4	3.00%	1.50%																																			
5	2.50%	1.20%																																			
6	2.00%	0.90%																																			
7	1.75%	0.70%																																			
8	1.25%	0.60%																																			
9+	0.90%	0.50%																																			
		For the ten-pay option, a reduction of 50% of the above lapse rates is assumed for durations one through eight, and 0% lapse thereafter. For the twenty-pay option, a reduction of 25% of the above lapse rates is assumed for durations one through fifteen, and 0% lapse thereafter. For the paid up at age 65 option, a reduction of 25% of these lapse rates was assumed until age 60, and 0% lapse thereafter. For the non-level payment option, a reduction of 25% of the above lapse rates is assumed for all durations.																																			

Original Assumptions	200 Series 300 Series	Lapse Rates																																																																									
		Lapse rates vary by duration. Lapse rates for the lifetime-payment option are provided in the table below.																																																																									
		<table><tr><th>Duration</th><th>Lapse Rates</th></tr><tr><td>1</td><td>8.00%</td></tr><tr><td>2</td><td>6.00%</td></tr><tr><td>3</td><td>5.00%</td></tr><tr><td>4</td><td>4.00%</td></tr><tr><td>5+</td><td>3.50%</td></tr></table>			Duration	Lapse Rates	1	8.00%	2	6.00%	3	5.00%	4	4.00%	5+	3.50%																																																											
Duration	Lapse Rates																																																																										
1	8.00%																																																																										
2	6.00%																																																																										
3	5.00%																																																																										
4	4.00%																																																																										
5+	3.50%																																																																										
		For limited-pay policies, 2.00% lapse is assumed during the premium payment period.																																																																									
	400 Series	Lapse rates vary by duration.																																																																									
		<table><tr><th rowspan="2">Duration</th><th colspan="3">Lapse Rates</th></tr><tr><th>Lifetime</th><th>10 Pay</th><th>20 Pay</th></tr><tr><td>1</td><td>7.00%</td><td>2.00%</td><td>2.00%</td></tr><tr><td>2</td><td>4.00%</td><td>2.00%</td><td>2.00%</td></tr><tr><td>3</td><td>3.00%</td><td>2.00%</td><td>2.00%</td></tr><tr><td>4</td><td>2.50%</td><td>2.00%</td><td>2.00%</td></tr><tr><td>5</td><td>2.00%</td><td>2.00%</td><td>2.00%</td></tr><tr><td>6</td><td>2.00%</td><td>1.50%</td><td>1.50%</td></tr><tr><td>7</td><td>2.00%</td><td>1.25%</td><td>1.25%</td></tr><tr><td>8</td><td>2.00%</td><td>1.00%</td><td>1.00%</td></tr><tr><td>9</td><td>2.00%</td><td>1.00%</td><td>1.00%</td></tr><tr><td>10</td><td>2.00%</td><td>0.00%</td><td>1.00%</td></tr><tr><td>11</td><td>2.00%</td><td>0.00%</td><td>1.00%</td></tr><tr><td>12</td><td>2.00%</td><td>0.00%</td><td>1.00%</td></tr><tr><td>13</td><td>2.00%</td><td>0.00%</td><td>1.00%</td></tr><tr><td>14</td><td>2.00%</td><td>0.00%</td><td>1.00%</td></tr><tr><td>15</td><td>2.00%</td><td>0.00%</td><td>1.00%</td></tr><tr><td>16+</td><td>2.00%</td><td>0.00%</td><td>0.00%</td></tr></table>			Duration	Lapse Rates			Lifetime	10 Pay	20 Pay	1	7.00%	2.00%	2.00%	2	4.00%	2.00%	2.00%	3	3.00%	2.00%	2.00%	4	2.50%	2.00%	2.00%	5	2.00%	2.00%	2.00%	6	2.00%	1.50%	1.50%	7	2.00%	1.25%	1.25%	8	2.00%	1.00%	1.00%	9	2.00%	1.00%	1.00%	10	2.00%	0.00%	1.00%	11	2.00%	0.00%	1.00%	12	2.00%	0.00%	1.00%	13	2.00%	0.00%	1.00%	14	2.00%	0.00%	1.00%	15	2.00%	0.00%	1.00%	16+	2.00%	0.00%	0.00%
Duration	Lapse Rates																																																																										
	Lifetime	10 Pay	20 Pay																																																																								
1	7.00%	2.00%	2.00%																																																																								
2	4.00%	2.00%	2.00%																																																																								
3	3.00%	2.00%	2.00%																																																																								
4	2.50%	2.00%	2.00%																																																																								
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6	2.00%	1.50%	1.50%																																																																								
7	2.00%	1.25%	1.25%																																																																								
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11	2.00%	0.00%	1.00%																																																																								
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16+	2.00%	0.00%	0.00%																																																																								

**Exhibit III**  
**Massachusetts Mutual Life Insurance Company**  
**Comparison of Current and Original Pricing Assumptions**

<b>Original Assumptions</b>	<b>500 Series</b>
	<b>511 Series</b>

Lapse Rates Continued										
Voluntary lapse rates vary by duration and issue age. Lapse rates for the lifetime-payment option are provided in the table below.										
Duration	Lifetime-Payment Lapse Rates									
	Issue Ages									
	<40	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80+
0	7.50%	5.50%	3.75%	3.00%	2.50%	2.50%	3.25%	4.50%	5.50%	7.75%
1	5.75%	4.25%	3.00%	2.25%	2.00%	2.00%	2.50%	3.50%	4.50%	6.00%
2	4.25%	3.25%	2.25%	1.75%	1.50%	1.50%	1.75%	2.50%	3.25%	4.25%
3	3.25%	2.25%	1.75%	1.25%	1.00%	1.00%	1.25%	2.00%	2.50%	3.25%
4	2.00%	1.50%	1.00%	0.75%	0.75%	0.75%	1.00%	1.25%	1.50%	2.25%
5	1.75%	1.25%	0.75%	0.65%	0.65%	0.65%	0.75%	1.00%	1.25%	2.00%
6	1.50%	1.00%	0.65%	0.65%	0.65%	0.65%	0.65%	0.75%	1.00%	1.75%
7	1.25%	0.75%	0.65%	0.65%	0.65%	0.65%	0.65%	0.65%	0.75%	1.50%
8	1.00%	0.65%	0.65%	0.65%	0.65%	0.65%	0.65%	0.65%	0.65%	1.25%
9	0.75%	0.65%	0.65%	0.65%	0.65%	0.65%	0.65%	0.65%	0.65%	1.00%
10	0.65%	0.65%	0.65%	0.65%	0.65%	0.65%	0.65%	0.65%	0.65%	0.75%
11+	0.65%	0.65%	0.65%	0.65%	0.65%	0.65%	0.65%	0.65%	0.65%	0.65%
For limited-pay policies, the voluntary lapse rates are 3.5% in the first year and 0% thereafter.										
Voluntary lapse rates vary by duration and issue age.										
Pol Dur	Lifetime-Payment Lapse Rates									
	Issue Ages									
	<40	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80+
0	8.60%	4.50%	3.70%	3.55%	2.85%	3.50%	3.50%	3.85%	4.05%	3.55%
1	5.55%	4.15%	3.60%	2.90%	2.40%	2.35%	2.75%	3.15%	3.00%	3.10%
2	3.55%	3.00%	2.25%	2.10%	1.80%	1.85%	1.95%	1.95%	2.05%	2.05%
3	3.30%	2.05%	2.15%	1.70%	1.50%	1.55%	1.60%	1.80%	1.85%	1.75%
4	2.15%	1.95%	1.70%	1.35%	1.05%	1.00%	1.20%	1.15%	1.20%	1.35%
5	2.15%	1.95%	1.60%	1.10%	1.00%	1.00%	1.10%	1.15%	1.15%	1.25%
6	2.15%	1.95%	1.60%	1.10%	1.00%	1.00%	1.10%	1.15%	1.15%	1.25%
7	1.35%	1.35%	1.25%	1.05%	0.95%	0.90%	0.95%	1.05%	1.00%	1.00%
8	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%
9	0.70%	0.70%	0.70%	0.70%	0.70%	0.70%	0.70%	0.70%	0.70%	0.70%
10+	0.55%	0.55%	0.55%	0.55%	0.55%	0.55%	0.55%	0.55%	0.55%	0.55%
Pol Dur	Limited-Payment Lapse Rates									
	Issue Ages									
	<40	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80+
0	3.20%	2.65%	2.30%	2.00%	1.85%	1.90%	2.15%	2.30%	2.35%	2.15%
1	2.85%	2.45%	2.05%	1.75%	1.55%	1.60%	1.70%	1.90%	2.00%	1.85%
2	2.30%	1.80%	1.55%	1.20%	1.10%	1.20%	1.25%	1.30%	1.70%	1.30%
3	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
4	0.60%	0.60%	0.60%	0.60%	0.60%	0.60%	0.60%	0.60%	0.60%	0.60%
5	0.65%	0.65%	0.65%	0.65%	0.65%	0.65%	0.65%	0.65%	0.65%	0.65%
6	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%
7+	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

**Exhibit III**  
**Massachusetts Mutual Life Insurance Company**  
**Comparison of Current and Original Pricing Assumptions**

<b>Current Assumptions</b>	<b>All</b>
<b>Original Assumptions</b>	<b>All</b>

<b>Benefit Expiry Rates</b>	
Benefit expiry rates reflect assumed policy termination due to exhaustion of benefits on limited benefit period policies. The rates are based on the 2014 <i>Guidelines</i> and vary by gender, benefit period, and attained age. A table containing the benefit expiry rates is provided in Section 6 of the actuarial memorandum.	
An explicit benefit expiry assumption was not included in the original pricing memoranda.	

<b>Current Assumptions</b>	<b>All</b>
<b>Original Assumptions</b>	<b>200 Series</b> <b>300 Series</b> <b>400 Series</b> <b>500 Series</b> <b>511 Series</b>

<b>Interest Rate</b>																				
<table> <tr> <th><b>Series</b></th><th><b>Maximum Valuation at Issue<sup>[1]</sup></b></th><th><b>Current<sup>[2]</sup></b></th></tr> <tr> <td>200</td><td>4.5%</td><td>5.0%</td></tr> <tr> <td>300</td><td>4.5%</td><td>5.0%</td></tr> <tr> <td>400</td><td>4.1%</td><td>5.0%</td></tr> <tr> <td>500</td><td>4.0%</td><td>4.0%</td></tr> <tr> <td>511</td><td>3.7%</td><td>3.7%</td></tr> </table> <p><i>[1] Average interest rates by series are shown. Interest rate varies by policy from 3.5% to 4.5% and is based on policy issue date.</i>  <i>[2] Basis that is consistent with original pricing, which is earnings rate for pre-500 and maximum valuation rate for 500+.</i></p>	<b>Series</b>	<b>Maximum Valuation at Issue<sup>[1]</sup></b>	<b>Current<sup>[2]</sup></b>	200	4.5%	5.0%	300	4.5%	5.0%	400	4.1%	5.0%	500	4.0%	4.0%	511	3.7%	3.7%	6.5% earnings rate 6.0% earnings rate 5.0% earnings rate 4.0% maximum valuation rate 4.0% maximum valuation rate	
<b>Series</b>	<b>Maximum Valuation at Issue<sup>[1]</sup></b>	<b>Current<sup>[2]</sup></b>																		
200	4.5%	5.0%																		
300	4.5%	5.0%																		
400	4.1%	5.0%																		
500	4.0%	4.0%																		
511	3.7%	3.7%																		

<b>Current Assumptions</b>	<b>All</b>
<b>Original Assumptions</b>	<b>All</b>

<b>Improvement</b>	
Annual improvement in the mortality and morbidity assumptions is assumed for 10 future years. Annual improvement factors vary by attained age based on the G2 improvement scale from the 2012IAM table.	
An annual improvement assumption was not included in pricing.	

## Appendix A

### Development and Justification of Current Assumptions

The current actuarial assumptions used in this filing were developed independently by Milliman.

The persistency and morbidity assumptions were developed using historical experience on MassMutual policies. Where actual experience had low credibility or did not exist, experience on other policy forms issued by MassMutual or industry experience was considered. Historical experience through December 31, 2016 was used in the assumption development and morbidity experience included claim runout through December 31, 2017. Experience on all of MassMutual's long-term care products, including its currently marketed 513 Series product, was combined in determining the assumptions described herein. As such, for the purposes of this Appendix, "500+ Series" experience is defined as the combined experience of the 500, 511, and 513 Series.

Improvement (mortality and morbidity), benefit expiry, and rate increase dependent assumptions were developed using industry experience and actuarial judgment.

Predictive analytics was used in the development of the mortality and morbidity assumptions. The voluntary lapse assumption utilized traditional techniques and credibility measures.

The rest of this appendix provides details on the development and justification of the current assumptions.

#### Persistency

The assumptions for mortality and voluntary lapse were developed based on MassMutual's historical experience through December 31, 2016. The benefit expiry assumption was developed using the 2014 Milliman *Long-Term Care Guidelines (Guidelines)*.

#### Mortality

The mortality assumption utilizes the 2012 Individual Annuity Mortality Basic gender-distinct table (2012IAM) and experience-adjustment factors to be applied to 2012IAM. To develop the experience-adjustment factors, we used predictive analytics as described in the Predictive Analytics section below.

Exhibit A-1 supports the mortality assumption and provides the following information for all rate series by partner (marital) status, gender, policy duration, attained age band, underwriting class, and rate series:

- Exhibit A-1a – Provides the adjustment factors that are to be applied to the 2012IAM hazard rates; the adjusted hazard rates are converted back into mortality probabilities to create the adjusted mortality assumption.
- Exhibit A-1b
  - Policy year exposure [A] reflects the length of time a covered life is exposed to the risk of death (i.e., exact exposure basis).
  - Actual deaths [B]
  - Mortality probabilities underlying actual experience [C], 2012IAM [D], and the adjusted assumption [E]  
Mortality probabilities were calculated by first calculating the hazard rate of mortality, then transforming into a probability. For example, the actual mortality probability  $[C] = 1 - \text{EXP}(-([B] / [A]))$ .
  - Actual-to-expected (A:E) ratios are calculated as actual mortality probabilities to the 2012IAM mortality probabilities [F] and the adjusted assumption [G]. The adjusted A:E [G] provides an indication of fit. This fit will not be perfect (i.e., ratio deviates from 1.0) because the main goal is to develop an assumption that generalizes well to new data by balancing assumption complexity and fit on the historical experience.

#### Lifetime-Pay Voluntary Lapse

Exhibit A-2a(i) provides total exposure, composite termination probabilities, expected mortality probabilities, derived voluntary lapse probabilities, credibility percent, and smoothed voluntary lapse probabilities for single (without a partner) policies by duration. This exhibit includes experience for policies with a lifetime premium payment option. Exhibit A-2a(ii) provides similar information for partnered (married) policies.

In general, the smoothed voluntary lapse probabilities were set in such a way that the combined-duration smoothed probabilities were close to the derived voluntary lapse probabilities (see the rows at the bottom of the exhibits). In developing the ultimate (duration 9+) voluntary lapse probability, the actual voluntary lapse experience was considered, to the extent credible.

## **Appendix A**

### **Development and Justification of Current Assumptions**

To develop derived voluntary lapse probabilities, the actual composite terminations were used, where composite terminations represent all terminations with the exclusion of benefit expiries; a separate benefit expiry assumption was developed based on the *Guidelines* as described below.

The actual composite termination probabilities were calculated by transforming hazard rates as follows:

$$\text{Annualized Composite Termination Probability} = 1 - \text{EXP}(-(\text{Actual Composite Termination} / \text{Exposure}))$$

Actual composite terminations (excluding benefit expiry) were assigned to the duration in which it occurred. Each death or voluntary lapse contributes 1.0 to the actual termination count. Exposure reflects an exact exposure basis.

The expected mortality probability corresponds to that underlying the adjusted assumption described in the Mortality section above; that is, 2012IAM with the experience-adjustment factors in Exhibit A-1a.

The derived voluntary lapse probability was then calculated according to the following formula:

$$\text{Derived Voluntary Lapse Probability} = \frac{1 - (1 - \text{Composite Termination Probability})}{(1 - \text{Expected Mortality Probability})}$$

#### *Other Payment Options Voluntary Lapse*

The smoothed lapse probabilities for other premium payment options (i.e., limited and discounted renewal premium payment options) are a scalar of the lifetime-pay lapse probabilities shown in Exhibit A-2a.

For the 10-pay option, the scalars were developed from a comparison of the lifetime-pay derived lapse probabilities to the 10-pay derived lapse probabilities based on MassMutual experience. Exhibit A-2b provides similar information as Exhibit A-2a, but for policies with a 10-year premium payment period.

For the 20-pay, paid-up at age 65, and discounted renewal payment options, termination experience was of limited credibility. As such, scalars based on actuarial judgment were developed for these options to apply to the lifetime-pay lapse rates. These options are immaterial to the projections for this block of business as they account for <5% of the in-force distribution of business as of December 31, 2016.

The relationships for each payment option were used to develop the smoothed lapse assumptions for the 10-pay, 20-pay, paid-up at age 65, and discounted renewal options detailed in Section 6 of the actuarial memorandum. For insureds with a limited payment duration and the discounted renewal payment option, both scalars are applied to the base lifetime-pay lapse rate.

#### *Benefit Expiry*

Benefit expiry probabilities reflect assumed policy lapses due to exhaustion of benefits based on the 2014 *Guidelines* and vary by attained age, gender, and benefit period. Policies with lifetime benefits do not have an expiry assumption (i.e., rate of 0%).

#### **Morbidity**

The morbidity assumption uses claim costs from the 2014 *Guidelines* with experience-adjustment factors based on MassMutual experience. To develop the experience-adjustment factors, we used predictive analytics as described in the Predictive Analytics section below.

Exhibit A-3 supports the morbidity assumption and provides the adjustment factors as well as an A:E exhibit for the key experience buckets used in the development of the factors:

- Exhibit A-3a – Provides the adjustment factors that are to be applied to the 2014 *Guidelines* claim costs.
- Exhibit A-3b
  - Exposure [A] reflects the length of time a covered life is in force (i.e., an exact exposure basis).
  - Actual incurred claim counts [B] and dollars [C] are based on historical claim experience from inception through December 31, 2016, with runout through December 31, 2017. Actual incurred claim dollars were valued as paid claims plus claim reserves. Paid claims and claim reserves were discounted to the year of incurral.

## **Appendix A**

### **Development and Justification of Current Assumptions**

- 2014 *Guidelines* expected incurred claims [D] are valued as the 2014 *Guidelines* claim costs multiplied by actual all-lives exposure. The claim costs vary by gender, attained age, policy duration, benefit period, elimination period, payment type, level of home care coverage, inflation type, and coverage type (comprehensive/facility only). Policy design, claims adjudication, and degree of underwriting were considered in developing the claim costs.
- Adjusted expected incurred claims [E] are calculated by applying each applicable adjustment from Exhibit A-3a to the 2014 *Guidelines* expected incurred claims [D].
- A:E ratios are calculated as actual incurred claims to the 2014 *Guidelines* expected incurred claims [F] and adjusted expected incurred claims [G]. The adjusted A:E [G] provides an indication of fit. This fit will not be perfect (i.e., ratio deviates from 1.0) because the main goal is to develop an assumption that generalizes well to new data by balancing assumption complexity and fit on the historical experience.

#### ***Improvement***

For projected mortality improvement, the G2 improvement scale from the 2012IAM mortality table was used. This assumption was also used for projected morbidity improvement. The G2 improvement scale varies by attained age and is applied beginning in the first projection year and continues for 10 projection years.

#### ***Rate Increase Dependent Assumptions***

At the time of a rate increase, insureds have options to elect a contingent benefit upon lapse (CBUL) or reduced benefit options (RBO). Adverse selection is assumed relative to CBUL and RBO elections. These insured behavior assumptions are provided below, and were developed primarily based on actuarial judgment with high-level consideration for the experience of other carriers in the LTC industry, to the extent available.

##### ***Contingent Benefit Upon Lapse Election Rates***

A CBUL election rate is determined as a function of the magnitude of the rate increase and applied on a seriatim basis. The CBUL election rate is determined as a factor of 0.08 multiplied by the rate increase percentage for rate increases greater than 15%. The rate increase percentage is rounded to the nearest 10% prior to applying this factor to remove implied specificity. For rate increases less than or equal to 15%, no CBUL is assumed.

No CBUL elections are assumed for insureds with a limited premium payment option.

##### ***Reduced Benefit Options***

The RBO election rate is based on the CBUL election rate. The RBO election rate is assumed to be two and a half times the CBUL election rate (i.e., 2.5 multiplied by CBUL election) for rate increases greater than 15%. Because the RBO election rate is based on the CBUL election rate; no RBO is assumed for increases less than or equal to 15% or for insureds with a limited premium payment option.

Based on the RBO election function, the reduction to premium and claims can then be determined as follows:

Reduction to premium and claims due to the election of RBO  
=  $1 - (\text{Average premium level after the rate increase with RBO election} / \text{Premium level after the full rate increase without any RBO election})$ , where

Average premium level after the rate increase with RBO election  
= weighted average premium level of the assumed percentage of insureds electing RBO with the percentage assumed to accept the full rate increase

##### ***Adverse Selection***

The adverse selection assumption is a function of the CBUL and RBO election rates, such that the relative increase to morbidity due to adverse selection varies by the rate increase's magnitude. The percentage increase in morbidity due to adverse selection was developed from the following formula and actuarial judgment. We assume that at the time of the rate increase, insureds that elect a CBUL will be selective in that their relative morbidity is 25% lower than that of the remaining pool. Similarly, we assume that at the time of the rate increase, insureds that elect an RBO will be selective in that their relative morbidity is 12.5% lower than that of the remaining pool.

## Appendix A

### Development and Justification of Current Assumptions

$\text{PoolMorb} = \text{AdvSelMorb} \times (1 - \text{CBUL} - \text{RBO}) + [(1 - 25\%) \times \text{AdvSelMorb}] \times \text{CBUL} + [(1 - 12.5\%) \times \text{AdvSelMorb}] \times \text{RBO}$ , where

PoolMorb =	morbidity of the pool before the rate increase = 1.0
AdvSelMorb =	adverse morbidity of the remaining pool after the rate increase due to selective lapses
CBUL =	percentage of policies that elect CBUL
RBO =	percentage of policies that elect RBO

Solving the above for the adverse selection component results in the following formula:

$$\text{Adverse Selection} = 1 / (1 - 25\% \times \text{CBUL} - 12.5\% \times \text{RBO})$$

#### ***Predictive Analytics***

In developing the mortality and morbidity adjustment factors, predictive analytics was employed in the form of a penalized generalized linear model (GLM).

A penalized GLM is similar to a traditional GLM. The only difference is that it adds an additional constraint that penalizes the size of the model's coefficients in order to control overfitting the model to the historical data. This penalty placed on the coefficients can be seen as a credibility lever, which controls how much weight is given to the company's actual experience. A high penalty would give no weight to the data, leaving the benchmark assumption (i.e., the 2012IAM for mortality or the 2014 *Guidelines* for morbidity) unadjusted. No penalty would give full weight to the company's actual data potentially making large adjustments to the benchmark, which could be overfitting the actual experience. When using a penalized GLM it is important to choose a penalty that gives the right amount of weight to the actual data to avoid underfitting or overfitting the experience.

A standard approach for choosing such a penalty is to use a k-fold cross-validation to test a series of penalty values. A k-fold cross-validation splits the data into k subsets and iteratively trains and tests the model independently on each subset of the data. This process gives an estimation of how well a model will generalize to new data that was not used to develop the assumption. Through the k-fold cross-validation we evaluated the impact the penalty had on the model's generalizability by testing a range of 100 penalties. We selected the penalty that minimized the k-fold cross-validation prediction error. Using this approach, we were able to determine the amount of weight to give actual experience versus the benchmark assumption through a statistically robust and automated process.

#### ***Credibility***

Traditional techniques were employed to develop the voluntarily lapse assumption, which considers actual historical experience, its associated credibility, and actuarial judgment. The credibility percentage was determined as  $(\text{Number of Events} / \text{Credibility Threshold})^{1/2}$ , where an event is defined as an actual voluntary lapse. A credibility standard of a 90% confidence interval for the number of events with an error of plus or minus 7.5% was chosen. Based on these parameters, 481 events is the criterion for full credibility.



**Exhibit A-1a**  
**Mortality Hazard Rate Adjustment Factors**

<b>Attained Age</b>	<b>Factor</b>
<55	0.99
55	0.97
56	0.94
57	0.91
58	0.88
59	0.85
60	0.82
61	0.79
62	0.77
63	0.74
64	0.72
65	0.71
66	0.71
67	0.73
68	0.74
69	0.76
70	0.78
71	0.80
72	0.82
73	0.83
74	0.85
75	0.87
76	0.89
77	0.90
78	0.90
79	0.90
80	0.91
81	0.92
82	0.94
83	0.95
84	0.96
85	0.96
86	0.97
87	0.98
88	0.99
89	0.99
90	1.00
91	1.00
92	1.00
93	1.00
94	1.00
95	1.00
96	1.00
97	1.00
98	1.00
99	1.00
100+	1.00

<b>Gender</b>	<b>Factor</b>
Male	0.98
Female	0.96

<b>Partner Status</b>	<b>Factor</b>
Single	0.99
Partnered	0.95

<b>Underwriting Class</b>	<b>Factor</b>
Preferred	0.94
Standard	0.99
Substandard	1.01

<b>Duration</b>	<b>Factor</b>
1	0.82
2	0.71
3	0.64
4	0.59
5	0.56
6	0.64
7	0.72
8	0.77
9	0.79
10	0.81
11	0.83
12	0.85
13	0.87
14	0.89
15	0.91
16	0.93
17	0.95
18	0.97
19	0.98
20+	0.98

**Exhibit A-1b**  
**Actual-to-Expected (A:E) Mortality Experience through December 31, 2016**  
**All Rate Series Combined**

Policy or Policyowner Characteristic	Policy Year Exposure [A]	Actual		Expected Mortality Probability		Actual-to-Expected Mortality	
		Deaths [B]	Probability [C]	2012IAM [D]	Adjusted [E]	2012IAM [F] = [C] / [D]	Adjusted [G] = [C] / [E]
Partner Status							
Partnered	633,561	1,725	0.3%	0.7%	0.4%	0.41	0.77
Single	227,515	974	0.4%	0.8%	0.5%	0.53	0.91
Gender							
Female	481,531	1,253	0.3%	0.6%	0.3%	0.44	0.79
Male	379,545	1,446	0.4%	0.8%	0.4%	0.46	0.85
Policy Duration							
1-3	283,626	351	0.1%	0.4%	0.2%	0.28	0.52
4-6	226,364	530	0.2%	0.6%	0.3%	0.40	0.93
7-9	171,663	650	0.4%	0.8%	0.4%	0.50	0.91
10-12	125,828	668	0.5%	1.0%	0.6%	0.52	0.86
13+	53,595	500	0.9%	1.5%	1.0%	0.61	0.90
Attained Age							
<65	569,972	776	0.1%	0.4%	0.2%	0.36	0.68
65-69	165,496	562	0.3%	0.9%	0.4%	0.38	0.79
70-74	83,040	591	0.7%	1.3%	0.7%	0.53	0.95
75-79	30,756	399	1.3%	2.2%	1.4%	0.59	0.93
80-84	9,331	229	2.4%	3.9%	2.7%	0.63	0.91
85+	2,481	142	5.6%	7.7%	5.8%	0.73	0.97
Underwriting							
Preferred	536,646	1,597	0.3%	0.7%	0.4%	0.42	0.77
Standard	275,333	848	0.3%	0.7%	0.4%	0.45	0.81
Substandard	49,096	254	0.5%	0.7%	0.4%	0.76	1.34
Rate Series							
200 Series	316,341	1,493	0.5%	0.9%	0.5%	0.54	0.94
300 Series	229,396	643	0.3%	0.6%	0.4%	0.43	0.79
400 Series	152,091	340	0.2%	0.6%	0.3%	0.38	0.74
500+ Series	163,247	223	0.1%	0.5%	0.3%	0.26	0.52
Total	861,076	2,699	0.3%	0.7%	0.4%	0.45	0.82

**Exhibit A-2a(i)**  
**Derived Lifetime-Pay Voluntary Lapse Experience through December 31, 2016**  
**Single Policies for All Rate Series Combined**

<b>Duration</b>	<b>Exposure</b>	<b>Composite Termination Probability</b>	<b>Expected Mortality Probability</b>	<b>Derived Lapse Probability</b>	<b>Credibility Percent</b>	<b>Smoothed Lapse Probability</b>
1	23,407	4.2%	0.3%	4.0%	100%	4.00%
2	21,264	5.8%	0.3%	5.5%	100%	5.50%
3	19,703	3.8%	0.3%	3.6%	100%	3.50%
4	18,369	3.3%	0.3%	3.0%	100%	3.00%
5	17,007	2.8%	0.3%	2.5%	93%	2.50%
6	15,568	2.3%	0.4%	1.9%	79%	2.00%
7	14,443	2.2%	0.5%	1.7%	73%	1.75%
8	13,494	1.9%	0.5%	1.4%	62%	1.25%
9	12,543	1.9%	0.6%	1.3%	59%	0.90%
10	11,331	1.7%	0.7%	0.9%	47%	0.90%
11	10,159	1.4%	0.8%	0.6%	40%	0.90%
12	8,603	1.5%	0.9%	0.6%	34%	0.90%
13	6,007	2.2%	1.1%	1.1%	32%	0.90%
14	3,887	2.1%	1.4%	0.7%	23%	0.90%
15	2,128	2.1%	1.6%	0.5%	14%	0.90%
16	834	2.1%	2.0%	0.1%	10%	0.90%
17	65	0.0%	2.4%	-2.4%	0%	0.90%
1-3	64,374	4.6%	0.3%	4.4%	100%	4.3%
4-6	50,944	2.8%	0.3%	2.5%	100%	2.5%
7+	83,493	1.9%	0.8%	1.1%	100%	1.1%
8+	69,050	1.8%	0.8%	1.0%	100%	1.0%
9+	55,556	1.8%	0.9%	0.9%	100%	0.9%
All	198,811	3.0%	0.5%	2.5%	100%	2.5%

**Exhibit A-2a(ii)**  
**Derived Lifetime-Pay Voluntary Lapse Experience through December 31, 2016**  
**Partnered Policies for All Rate Series Combined**

<b>Duration</b>	<b>Exposure</b>	<b>Composite Termination Probability</b>	<b>Expected Mortality Probability</b>	<b>Derived Lapse Probability</b>	<b>Credibility Percent</b>	<b>Smoothed Lapse Probability</b>
1	63,015	1.7%	0.3%	1.5%	100%	1.50%
2	58,226	2.8%	0.2%	2.6%	100%	2.50%
3	54,233	2.2%	0.2%	1.9%	100%	2.00%
4	50,328	1.7%	0.2%	1.4%	100%	1.50%
5	45,537	1.4%	0.2%	1.2%	100%	1.20%
6	39,531	1.2%	0.3%	0.9%	86%	0.90%
7	35,798	1.1%	0.4%	0.7%	77%	0.70%
8	32,859	1.0%	0.4%	0.6%	68%	0.60%
9	30,266	1.0%	0.5%	0.5%	58%	0.50%
10	27,255	0.9%	0.5%	0.4%	53%	0.50%
11	24,529	1.1%	0.6%	0.5%	50%	0.50%
12	20,834	1.0%	0.7%	0.3%	42%	0.50%
13	15,039	1.0%	0.8%	0.1%	33%	0.50%
14	10,352	1.4%	1.0%	0.5%	33%	0.50%
15	5,487	1.4%	1.2%	0.1%	18%	0.50%
16	2,042	1.1%	1.5%	-0.5%	9%	0.50%
17	138	0.7%	1.9%	-1.2%	0%	0.50%
1-3	175,475	2.2%	0.2%	2.0%	100%	2.0%
4-6	135,396	1.4%	0.3%	1.2%	100%	1.2%
7+	204,599	1.0%	0.6%	0.5%	100%	0.6%
8+	168,800	1.0%	0.6%	0.4%	100%	0.5%
9+	135,942	1.0%	0.7%	0.4%	100%	0.5%
All	515,469	1.6%	0.4%	1.2%	100%	1.2%

**Exhibit A-2b(i)**  
**Derived 10-Pay Voluntary Lapse Experience through December 31, 2016**  
**Single Policies for All Rate Series Combined**

Duration	Exposure	Composite Termination Probability	Expected Mortality Probability	Derived Lapse Probability	Credibility Percent	Ratio to Lifetime-Pay Lapse <sup>[1]</sup>	Smoothed Ratio to Lifetime-Pay <sup>[2]</sup>	Smoothed Lapse Probability
1	1,950	1.8%	0.2%	1.6%	27%	0.41	0.50	2.00%
2	1,884	3.9%	0.2%	3.7%	38%	0.68	0.50	2.75%
3	1,820	2.4%	0.2%	2.3%	30%	0.64	0.50	1.75%
4	1,793	1.7%	0.2%	1.5%	24%	0.51	0.50	1.50%
5	1,733	1.6%	0.2%	1.4%	24%	0.57	0.50	1.25%
6	1,587	0.8%	0.2%	0.6%	14%	0.31	0.50	1.00%
7	1,499	1.1%	0.3%	0.8%	16%	0.45	0.50	0.88%
8	1,442	0.4%	0.3%	0.1%	9%	0.07	0.50	0.63%
9	1,371	0.4%	0.4%	0.1%	8%	0.06	0.00	0.00%
10	1,251	0.2%	0.4%	-0.2%	0%	-0.17	0.00	0.00%
11	1,103	0.2%	0.5%	-0.3%	0%	-0.46	0.00	0.00%
12	902	0.2%	0.5%	-0.3%	0%	-0.51	0.00	0.00%
13	502	0.4%	0.6%	-0.2%	0%	-0.17	0.00	0.00%
14	282	0.7%	0.7%	0.0%	0%	-0.01	0.00	0.00%
15	143	0.7%	0.9%	-0.2%	0%	-0.42	0.00	0.00%
16	52	0.0%	1.0%	-1.0%	0%	-7.48	0.00	0.00%
17	3	0.0%	0.8%	-0.8%	0%	0.33	0.00	0.00%
All	19,318	1.4%	0.3%	1.1%	69%	0.43	0.43	1.1%

[1] Values in this column are calculated as the ratio of the 10-pay derived lapse probability to the corresponding lifetime-pay derived lapse probability from Exhibit A-2a (e.g., Duration 3 ratio = 2.3% / 3.6%).

[2] Values in this column are calculated as the ratio of the 10-pay smoothed lapse probability to the corresponding lifetime-pay smoothed lapse probability from Exhibit A-2a (e.g., Duration 3 ratio = 1.75% / 3.50%).

**Exhibit A-2b(ii)**  
**Derived 10-Pay Voluntary Lapse Experience through December 31, 2016**  
**Partnered Policies for All Rate Series Combined**

<b>Duration</b>	<b>Exposure</b>	<b>Composite Termination Probability</b>	<b>Expected Mortality Probability</b>	<b>Derived Lapse Probability</b>	<b>Credibility Percent</b>	<b>Ratio to Lifetime-Pay Lapse<sup>[1]</sup></b>	<b>Smoothed Ratio to Lifetime-Pay<sup>[2]</sup></b>	<b>Smoothed Lapse Probability</b>
1	8,646	0.7%	0.2%	0.5%	35%	0.35	0.50	0.75%
2	8,528	1.4%	0.2%	1.2%	48%	0.46	0.50	1.25%
3	8,431	1.3%	0.2%	1.1%	46%	0.59	0.50	1.00%
4	8,325	1.1%	0.2%	0.9%	41%	0.65	0.50	0.75%
5	7,960	1.2%	0.2%	1.0%	42%	0.89	0.50	0.60%
6	6,899	0.5%	0.2%	0.3%	25%	0.39	0.50	0.45%
7	6,371	0.9%	0.2%	0.6%	28%	0.90	0.50	0.35%
8	6,009	0.4%	0.3%	0.2%	14%	0.27	0.50	0.30%
9	5,560	0.4%	0.3%	0.1%	11%	0.18	0.00	0.00%
10	4,936	0.5%	0.3%	0.2%	19%	0.44	0.00	0.00%
11	4,360	0.4%	0.4%	0.0%	14%	0.02	0.00	0.00%
12	3,477	0.4%	0.4%	0.0%	6%	-0.09	0.00	0.00%
13	1,986	0.4%	0.5%	-0.2%	0%	-1.09	0.00	0.00%
14	1,158	0.6%	0.6%	0.0%	0%	0.00	0.00	0.00%
15	599	0.7%	0.7%	0.0%	0%	-0.20	0.00	0.00%
16	216	0.5%	0.8%	-0.3%	0%	0.72	0.00	0.00%
17	11	0.0%	1.0%	-1.0%	0%	0.83	0.00	0.00%
All	83,473	0.8%	0.2%	0.6%	100%	0.50	0.43	0.5%

[1] Values in this column are calculated as the ratio of the 10-pay derived lapse probability to the corresponding lifetime-pay derived lapse probability from Exhibit A-2a (e.g., Duration 3 ratio = 1.1% / 1.9%).

[2] Values in this column are calculated as the ratio of the 10-pay smoothed lapse probability to the corresponding lifetime-pay smoothed lapse probability from Exhibit A-2a (e.g., Duration 3 ratio = 1.00% / 2.00%).

**Exhibit A-3a**  
**Morbidity Adjustment Factors**

Duration	Rate Series			
	200 Series	300 Series	400 Series	500+ Series
1	0.99	1.05	1.02	1.00
2	1.01	1.12	1.05	0.99
3	1.02	1.11	1.05	0.97
4	1.08	1.03	0.99	0.96
5	1.05	0.96	0.95	0.96
6	1.10	0.99	0.92	0.98
7	1.05	1.01	0.95	0.98
8	1.10	1.03	0.94	0.98
9	1.09	1.02	0.93	0.97
10	1.14	1.02	0.90	0.99
11	1.08	0.96	0.91	1.00
12	1.05	0.92	0.93	1.00
13	0.99	0.90	0.97	1.00
14	0.99	0.95	0.99	1.00
15	0.96	0.98	1.00	1.00
16	0.97	1.00	1.00	1.00
17	0.97	1.00	1.00	1.00
18	1.00	1.00	1.00	1.00
19	1.00	1.00	1.00	1.00
20+	1.00	1.00	1.00	1.00

Gender	Factor
Male	1.04
Female	0.91

Underwriting Class	Factor
Preferred	0.90
Non-Preferred	1.05

Attained Age	Rate Series				Benefit Period		Benefit Type	
	200 Series	300 Series	400 Series	500+ Series	Lifetime	Non-Lifetime	Indemnity	Reimbursement
<55	1.02	1.00	1.00	1.00	1.02	1.00	1.03	0.99
55	1.02	1.00	1.00	1.00	1.02	1.00	1.03	0.99
56	1.02	1.00	1.00	1.00	1.02	1.00	1.03	0.99
57	1.02	1.00	0.97	0.99	0.99	0.99	1.01	0.97
58	1.00	0.98	0.94	0.99	0.94	0.97	0.99	0.93
59	0.98	0.98	0.93	0.98	0.92	0.95	0.96	0.91
60	0.93	0.97	0.91	0.98	0.88	0.92	0.91	0.89
61	0.93	0.96	0.88	0.98	0.87	0.90	0.89	0.88
62	0.92	0.95	0.88	0.99	0.86	0.89	0.86	0.89
63	0.93	0.95	0.90	1.00	0.89	0.89	0.85	0.93
64	0.96	0.93	0.90	1.00	0.91	0.88	0.86	0.94
65	1.00	0.91	0.91	1.01	0.92	0.91	0.89	0.94
66	0.99	0.91	0.93	1.00	0.93	0.91	0.92	0.92
67	1.00	0.92	0.96	1.00	0.96	0.92	0.96	0.92
68	1.01	0.96	0.96	0.99	0.99	0.93	1.03	0.90
69	0.99	0.98	0.95	0.99	0.97	0.95	1.05	0.87
70	0.97	1.01	0.97	0.98	0.99	0.93	1.04	0.89
71	0.97	1.02	0.96	0.98	1.02	0.93	1.05	0.90
72	1.00	1.05	0.95	0.98	1.06	0.92	1.09	0.90
73	0.99	1.03	0.97	0.99	1.06	0.91	1.07	0.91
74	1.01	1.03	1.00	0.99	1.13	0.91	1.07	0.96
75	1.05	1.01	1.00	0.99	1.15	0.92	1.07	0.98
76	1.07	0.99	1.01	0.99	1.13	0.93	1.06	1.00
77	1.06	0.96	1.02	1.00	1.10	0.95	1.03	1.01
78	1.10	0.96	1.00	1.00	1.10	0.97	1.02	1.03
79	1.10	0.96	0.99	0.99	1.05	0.98	1.02	1.02
80	1.09	0.97	0.98	0.99	1.03	1.00	1.03	1.00
81	1.10	0.99	0.97	0.99	1.04	1.01	1.04	1.01
82	1.10	1.00	0.97	0.99	1.03	1.03	1.05	1.01
83	1.07	1.01	0.97	0.99	1.02	1.02	1.05	1.00
84	1.06	1.02	0.97	0.99	1.02	1.02	1.03	1.01
85	1.04	1.02	0.98	0.99	1.01	1.01	1.02	1.00
86	1.02	1.01	0.98	0.99	1.00	1.00	1.01	1.00
87	1.00	1.01	0.99	0.99	0.99	1.00	1.00	0.99
88	0.99	1.01	0.99	1.00	0.99	1.00	0.99	1.00
89	0.98	1.00	1.00	1.00	0.98	1.00	0.99	0.99
90	0.99	1.00	1.01	1.00	0.98	1.02	0.99	1.00
91	0.99	1.00	1.01	1.00	0.98	1.02	0.99	1.00
92	1.00	0.99	1.01	1.00	0.98	1.02	0.99	1.01
93	1.00	1.00	1.01	1.00	0.98	1.02	0.99	1.01
94	1.01	1.00	1.01	1.00	0.99	1.02	1.00	1.01
95	1.01	1.00	1.00	1.00	0.99	1.02	1.00	1.01
96	1.01	1.00	1.00	1.00	1.00	1.01	1.00	1.01
97	1.01	1.00	1.00	1.00	1.00	1.01	1.00	1.01
98	1.01	1.00	1.00	1.00	1.00	1.01	1.00	1.01
99	1.00	1.00	1.00	1.00	1.00	1.01	1.00	1.01
100+	1.00	1.00	1.00	1.00	1.00	1.01	1.00	1.00

**Exhibit A-3b**  
**Actual-to-Expected (A:E) Morbidity Experience through December 31, 2016 with Claim Runout**  
**All Rate Series Combined**

Policy or Policyowner Characteristic	Exposure [A]	Actual Incurred Claims		Expected Incurred Claims		Actual-to-Expected Incurred Claims	
		Count [B]	Dollars [C]	2014 <i>Guidelines</i> [D]	Adjusted [E]	2014 <i>Guidelines</i> [F] = [C] / [D]	Adjusted [G] = [C] / [E]
Partner Status							
Partnered	633,635	876	124,048,594	149,444,034	120,544,568	0.83	1.03
Single	227,993	826	121,211,932	150,297,766	124,715,707	0.81	0.97
Gender							
Female	482,025	1,023	154,581,170	199,983,051	159,654,075	0.77	0.97
Male	379,604	679	90,679,357	99,758,749	85,606,200	0.91	1.06
Policy Duration							
1-3	283,773	161	19,695,627	17,501,435	17,393,115	1.13	1.13
4-6	226,507	296	38,343,898	39,734,217	38,289,115	0.97	1.00
7-9	171,790	424	53,999,057	67,107,620	55,942,454	0.80	0.97
10-12	125,922	466	77,447,114	90,364,783	76,093,914	0.86	1.02
13+	53,636	355	55,774,830	85,033,744	57,541,678	0.66	0.97
Attained Age							
<64	569,996	358	49,741,046	61,277,039	49,275,898	0.81	1.01
65-69	165,548	275	47,126,413	60,891,816	46,645,563	0.77	1.01
70-74	83,119	315	51,145,259	66,942,436	54,400,783	0.76	0.94
75-79	30,888	350	53,617,580	56,798,760	50,974,964	0.94	1.05
80-84	9,475	261	30,528,317	35,272,061	30,218,075	0.87	1.01
85+	2,603	143	13,101,912	18,559,687	13,744,992	0.71	0.95
Underwriting							
Preferred	536,926	996	143,125,012	188,629,862	149,574,881	0.76	0.96
Non-Preferred	324,703	706	102,135,515	111,111,938	95,685,395	0.92	1.07
Benefit Type							
Indemnity	261,867	486	89,470,260	93,878,830	76,889,898	0.95	1.16
Reimbursement	599,762	1,216	155,790,266	205,862,969	168,370,377	0.76	0.93
Rate Series							
200 Series	316,802	1,023	144,886,364	159,218,142	136,496,321	0.91	1.06
300 Series	229,457	375	62,282,938	81,754,214	64,361,822	0.76	0.97
400 Series	152,111	204	24,106,166	39,255,569	29,031,345	0.61	0.83
500+ Series	163,258	100	13,985,059	19,513,874	15,370,786	0.72	0.91
Total	861,628	1,702	245,260,527	299,741,799	245,260,275	0.82	1.00



**Appendix B**  
**Massachusetts Mutual Life Insurance Company**  
**Comparison of Current and 513 Series Pricing Assumptions**

<b>Morbidity</b>	
<b>Current Assumptions</b>	Claim costs are developed using the 2014 Milliman Long-Term Care Guidelines (Guidelines) with adjustments for underwriting selection and an all-lives exposure basis. The claim costs were further adjusted based on historical claim experience by rate series, attained age, policy duration, benefit period, benefit payment type, gender, and underwriting class, to the extent credible. An exhibit containing the adjustment factors is provided in Appendix A to the actuarial memorandum.
<b>513 Pricing Assumptions</b>	The morbidity assumption was derived using industry experience as reported in the Intercompany Study 1984-2004 published by the Society of Actuaries Long Term Care Experience Committee (2004 Study) and adjusted, to the extent credible, by the aggregate experience of the company's reinsurer.
<b>Mortality</b>	
<b>Current Assumptions</b>	Mortality Rates reflect the 2012 Individual Annuity Mortality Basic gender-distinct table (2012IAM). The mortality rates were adjusted based on historical experience by attained age, policy duration, gender, underwriting class, and partner status, to the extent credible. An exhibit containing the adjustment factors is provided in Appendix A to the actuarial memorandum.
<b>513 Pricing Assumptions</b>	A2000 Mortality table is used for active lives along with adjustments by attained age and gender. The disabled mortality assumption is derived using industry experience as reported in the 2004 Study.

**Appendix B**  
**Massachusetts Mutual Life Insurance Company**  
**Comparison of Current and 513 Series Pricing Assumptions**

Lapse Rates												
Current Assumptions	Voluntary lapse rates (excludes benefit expiry) vary by policy duration and partner status.											
	Lapse Rate Assumptions											
	Duration	Single	Partnered									
	1	4.00%	1.50%									
	2	5.50%	2.50%									
	3	3.50%	2.00%									
	4	3.00%	1.50%									
	5	2.50%	1.20%									
	6	2.00%	0.90%									
	7	1.75%	0.70%									
	8	1.25%	0.60%									
	9+	0.90%	0.50%									
For the ten-pay option, a reduction of 50% of the above lapse rates is assumed for durations one through eight, and 0% lapse thereafter. For the twenty-pay option, a reduction of 25% of the above lapse rates is assumed for durations one through fifteen, and 0% lapse thereafter. For the paid up at age 65 option, a reduction of 25% of these lapse rates was assumed until age 60, and 0% lapse thereafter. For the non-level payment option, a reduction of 25% of the above lapse rates is assumed for all durations.												
513 Pricing Assumptions	Voluntary lapse rates vary by duration and issue age.											
	Pol Dur	Lifetime-Payment Lapse Rates										
		Issue Ages										
		<40	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80+	
		0	8.60%	4.50%	3.70%	3.55%	2.85%	3.50%	3.50%	3.85%	4.05%	3.55%
		1	5.55%	4.15%	3.60%	2.90%	2.40%	2.35%	2.75%	3.15%	3.00%	3.10%
		2	3.55%	3.00%	2.25%	2.10%	1.80%	1.85%	1.95%	1.95%	2.05%	2.05%
		3	3.30%	2.05%	2.15%	1.70%	1.50%	1.55%	1.60%	1.80%	1.85%	1.75%
		4	2.15%	1.95%	1.70%	1.35%	1.05%	1.00%	1.20%	1.15%	1.20%	1.35%
		5	2.15%	1.95%	1.60%	1.10%	1.00%	1.00%	1.10%	1.15%	1.15%	1.25%
		6	2.15%	1.95%	1.60%	1.10%	1.00%	1.00%	1.10%	1.15%	1.15%	1.25%
		7	1.35%	1.35%	1.25%	1.05%	0.95%	0.90%	0.95%	1.05%	1.00%	1.00%
		8	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%
	9	0.70%	0.70%	0.70%	0.70%	0.70%	0.70%	0.70%	0.70%	0.70%	0.70%	
	10+	0.55%	0.55%	0.55%	0.55%	0.55%	0.55%	0.55%	0.55%	0.55%	0.55%	
	Pol Dur	Limited-Payment Lapse Rates										
		Issue Ages										
		<40	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80+	
		0	3.20%	2.65%	2.30%	2.00%	1.85%	1.90%	2.15%	2.30%	2.35%	2.15%
		1	2.85%	2.45%	2.05%	1.75%	1.55%	1.60%	1.70%	1.90%	2.00%	1.85%
		2	2.30%	1.80%	1.55%	1.20%	1.10%	1.20%	1.25%	1.30%	1.70%	1.30%
		3	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
		4	0.60%	0.60%	0.60%	0.60%	0.60%	0.60%	0.60%	0.60%	0.60%	0.60%
		5	0.65%	0.65%	0.65%	0.65%	0.65%	0.65%	0.65%	0.65%	0.65%	0.65%
		6	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%
		7+	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

**Appendix B**  
**Massachusetts Mutual Life Insurance Company**  
**Comparison of Current and 513 Series Pricing Assumptions**

<b>Benefit Expiry Rates</b>	
<b>Current Assumptions</b>	Benefit expiry rates reflect assumed policy termination due to exhaustion of benefits on limited benefit period policies. The rates are based on the 2014 Guidelines and vary by gender, benefit period, and attained age. A table containing the benefit expiry rates is provided in Section 6 of the actuarial memorandum.
<b>513 Pricing Assumptions</b>	An explicit benefit expiry assumption was not included in the original pricing memoranda.

Interest Rate			
Current Assumptions			

<b>Improvement</b>	
<b>Current Assumptions</b>	Annual improvement in the mortality and morbidity assumptions is assumed for 10 future years. Annual improvement factors vary by attained age based on the G2 improvement scale from the 2012IAM table.
<b>513 Pricing Assumptions</b>	An annual improvement assumption was not included in pricing.

## Reset Form

Massachusetts Mutual Life Insurance Company - NAIC # 65935

MILL-131569310

This rate increase will apply to policies on their next policy anniversary date following at least a 90-day policyowner notification period following disposition of this filing by the department of insurance.

2,230

82%

0%

100%

4.736

**(The Form Number and “Product Name”)**

**“Product Name”(if applicable)**

***This document is intended to help explain the rate filing and it is only a summary of the company's request. It is not intended to describe or include all factors or information considered in the review process. For more detailed information, please refer to the complete filing.***

## **Long Term Care Insurance Rate Request Summary**

### **Summary of Key Information**

Many factors have changed over the years that have impacted the pricing of long term care insurance policies. For example, the cost of long term care services continues to increase and today, people are living longer and the need for long term care is growing rapidly. Due to these types of changes, we now expect to pay higher amounts of benefits than had been originally anticipated. This anticipated increase in expected benefits has led to the need for us to increase premium rates.

## READABILITY CERTIFICATION

### Massachusetts Mutual Life Insurance Company

I hereby certify to the accuracy of the Flesch reading ease test score for the following form(s).

<b><u>FORM NUMBER AND TITLE</u></b>	<b><u>FLESCH SCORE</u></b>
FR2251-VA-1 (0820) Notice of a Premium Increase to Long Term Care Insurance Policy	40.1
FR2251EF-VA Personalized Options Election Form	42.1



Signature: \_\_\_\_\_  
Roland Fawthrop  
Head of Health Product Management & Actuary

Date: May 13, 2021

### Letter of Authorization

To: Department of Insurance

Massachusetts Mutual Life Insurance Company ("MassMutual") has entered into a service agreement with Milliman, Inc. ("Milliman") effective October 19, 2017 that includes long-term care rate filing services on our behalf. The agreement provides, in part, that Milliman is responsible for preparing and filing for approval with state insurance departments MassMutual's long-term care rate increase filings as directed by MassMutual. Milliman is also authorized to receive, on MassMutual's behalf, written and oral communication from each state department of insurance for the purpose of completing the rate increase filing process.

Please accept this letter of authorization for the purpose stated above. Should you have any questions regarding the above, please forward your comments to:

Massachusetts Mutual Life Insurance Company  
1295 State Street  
Springfield, MA 01001

A handwritten signature in blue ink, appearing to read "R. Fawthrop", written over a horizontal line.

Roland Fawthrop, Second VP & Actuary  
Massachusetts Mutual Life Insurance Company

MARCH 26, 2018  
Date

## Massachusetts Mutual Life Insurance Company

### Statement of Variability for document:

#### Election Form for Long Term Care Insurance for rate increase, Virginia: FR2251EF-VA (0820)

The following comments describe the nature and scope of the variable material denoted with brackets on the document listed above. The “Bracketed Information” corresponds to the headings in the document. When applicable, ranges and/or alternate text are provided. Any use of variability shall be administered in accordance with the “Statement of Variability” in a uniform and non-discriminatory manner, and shall not result in unfair discrimination.

Location	Bracketed Information	Statement of Variability
All Pages	Company Logo	To allow for the company logo to be changed.
Page 1	CITY AND STATE	To allow for the flexibility to show the city and state of Massachusetts Mutual Life Insurance Company’s current home office location.
Pages 1, 2 & 3	POLICY ANNIVERSARY DATE	To allow for the flexibility to show the policy anniversary date associated with the rate increase on this policy.
Pages 1 & 3	MASSMUTUAL LONG TERM CARE ADMINISTRATION OFFICE	To allow for the flexibility to show the current contact information for the MassMutual Long Term Care Administration Office.
Footer on all pages	[XXXX]	We reserve the right to use this footer for internal tracking purposes in order to identify which bracketed items are included.
Pages 2 & 3	POLICYOWNER NAME	To allow for the flexibility to show the name of the policyowner on the letter.
Pages 2 & 3	JOINT POLICYOWNER NAME	To allow for the flexibility to show the name of the joint policyowner on the letter if there is a joint policyowner.  Note: On page 3, the joint policyowner name will be placed where “& Joint Policyowner Name” is bracketed, if there is a joint policyowner.
Pages 2 & 3	POLICY NUMBER	To allow for the flexibility to show the policy number on the letter.
Page 2	REDUCE THE BENEFIT PERIOD	The grid in this section will be deleted if the current Benefit Period is already



	TABLE	<p>at the minimum allowed.</p> <p>If the policy is already at the minimum allowed, then the bracketed sentence will appear.</p> <p>Either the grid or the sentence will appear, but never both.</p>
Page 2	CURRENT BENEFIT PERIOD	<p>To allow for the flexibility to show the policy's current Benefit Period.</p> <p>Depending on the policy series, the Benefit Period can be one of the following: 2 years, 3 years, 4 years, 5 years, 6 years, 10 years or Lifetime.</p>
Page 2	AVAILABLE OPTIONS	<p>To allow for the flexibility to display the available Benefit Period(s) for selection in this column.</p> <p>Depending on the options available on the original policy series and the current Benefit Period, the available options can be a subset of the following: 2 years, 3 years, 4 years, 5 years, 6 years and 10 years.</p>
Page 2	[MODE]	<p>To allow for the flexibility to show the current premium mode for the policy.</p> <p>The premium mode can be one of the following: Annual, Semi-Annual, Quarterly, Monthly PAC.</p>
Pages 2 & 3	POLICY CHANGE ELECTION	To allow for the flexibility to display a check box for each available option.
Page 2	REDUCE THE DAILY BENEFIT AMOUNT TABLE	<p>The grid in this section will be deleted if the current Daily Benefit Amount is already at the minimum allowed by the policy series.</p> <p>If the policy is already at the minimum allowed, then the bracketed sentence will appear.</p> <p>Either the grid or the sentence will appear, but never both.</p>
Page 2	DAILY BENEFIT AMOUNT / CURRENT DBA	To allow for the flexibility to show the policy's current Daily Benefit Amount.

Page 2	AVAILABLE OPTIONS	To allow for the flexibility to show up to two Daily Benefit Amount options that will keep premiums close to the premium currently being paid.
Page 2	EXTEND THE ELIMINATION PERIOD TABLE	<p>The grid in this section will be deleted if the current Elimination Period is already at the maximum allowed.</p> <p>If the policy is already at the maximum allowed, then the bracketed sentence will appear.</p> <p>Either the grid or the sentence will appear, but never both.</p>
Page 2	ELIMINATION PERIOD	<p>To allow for the flexibility to show the policy's current Elimination Period.</p> <p>Depending on the policy series, the Elimination Period can be one of the following: 0 Days, 30 Days, 60 Days, 90 Days or 180 Days.</p>
Page 2	AVAILABLE OPTIONS	<p>To allow for the flexibility to display the available Elimination Periods for selection in this column.</p> <p>Depending on the options available on the original policy series and the current Elimination Period, available options can be a subset of the following: 30 Days, 60 Days, 90 Days and 180 Days.</p>
Page 3	NONFORFEITURE RIDER OR CONTINGENT BENEFIT UPON LAPSE OPTION	<p>To allow for the flexibility to show which benefit is available for the policy. The heading of the section will match the heading in the grid.</p> <p>"Non-Forfeiture Rider" will be deleted from the heading of the section and the heading in the grid if there is not a Non-Forfeiture Rider attached to the policy.</p> <p>"Contingent Benefit Upon Lapse option" will be deleted from the heading of the section and the heading in the grid if there is a Non-Forfeiture Rider attached to the policy.</p>
Page 3	[TOTAL BENEFIT AMOUNT]	To allow for the flexibility to delete "Total" if the defined term in the policy is

		Benefit Amount, and not Total Benefit Amount.
Page 3	FILE EXTRACT DATE	The file extract date will be printed here.
Page 3	OPTION 1	To allow for the flexibility to delete the term “Option 1” if there is no Option 2 .
Page 3	OPTION 2	To allow for the flexibility to delete the entire sentence involving “Option 2” if there is no Option 2.
Page 3	SENTENCE BEGINNING WITH “IN ORDER TO ELECT THE CONTINGENT BENEFIT UPON LAPSE OPTION...”	To allow for the flexibility to delete the entire sentence if there is a Non-Forfeiture Rider attached to the policy.
Page 3	NAME OF JOINT POLICYOWNER	To allow for the flexibility to show the joint policyowner name if there a joint policyowner on the policy.  To all for the flexibility to delete if there is no joint policyowner.
Page 3	INSURED NAME	To allow for the flexibility to show the name of the insured associated with this policy.
Page 3	NAME OF JOINT INSURED	To allow for the flexibility to show the joint insureds name if there is a joint insured on the policy and to allow for the flexibility to delete if there is no joint insured.  Name will be placed where “Joint Insured Name” is bracketed.
Page 3	AGENT NAME	To allow for the flexibility to show the name of the agent associated with this policy.
Page 3	AGENCY NAME	To allow for the option to print the agency name and to allow for the option to not print the agency name.
Page 3	AGENT PHONE	To allow for the flexibility to show the agent phone number.

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**Massachusetts Mutual Life Insurance Company**

**Statement of Variability for document:**

**Notification Letter for Long Term Care Insurance for rate increase, Virginia: FR2251-VA-1 (0820)**

The following comments describe the nature and scope of the variable material denoted with brackets on the document listed above. The "Bracketed Information" corresponds to the headings in the document. When applicable, ranges and/or alternate text are provided. Any use of variability shall be administered in accordance with the "Statement of Variability" in a uniform and non-discriminatory manner, and shall not result in unfair discrimination.

<b>Location</b>	<b>Bracketed Information</b>	<b>Statement of Variability</b>
All Pages	COMPANY LOGO	To allow for the company logo to be changed.
Page 1	CITY AND STATE	To allow for the flexibility to show the city and state of Massachusetts Mutual Life Insurance Company's current home office location.
Page 1	DATE	To allow for the flexibility to show the date of the letter. This date will comply with the notification period as described in the applicable actuarial memorandum.
Page 1	POLICYOWNER NAME	To allow for the flexibility to show the name of the policyowner on the letter.
Page 1	JOINT POLICYOWNER NAME	To allow for the flexibility to show the name of the joint policyowner on the letter if there is a joint policyowner.
Page 1	ADDRESS	To allow for the flexibility to show the policyowner's address on the letter.
Page 1	CITY, STATE ZIP	To allow for the flexibility to show the city, state and zip code for the policyowner's address on the letter.
Page 1	POLICY NUMBER	To allow for the flexibility to show the policy number on the letter.
Page 1	ISSUED ON DATE	To allow for the flexibility to show the issue date of the policy.
Page 1	CONTRACT STATE	To allow for the flexibility to show the contract state of the policy.

Pages 1, 2, 4 & 6	POLICY ANNIVERSARY DATE	To allow for the flexibility to show the policy anniversary date associated with the rate increase on this policy.
Page 1	PARAGRAPH BEGINNING WITH "AFTER A CARERFUL AND THOROUGH ASSESSMENT"	This section is bracketed to allow for different reasons to be used for future rate increases. The company will revise and resubmit the SOV should different language be required.
Pages 1 & 5	MASSMUTUAL LONG TERM CARE ADMINISTRATION OFFICE	To allow for the flexibility to show the current contact information for the MassMutual Long Term Care Administration Office.
Footer on all pages	[XXXX]	We reserve the right to use this footer for internal tracking purposes in order to identify which bracketed items are included.
Page 2	THE FOLLOWING 8 ENTRIES ARE IN THE TABLE UNDER "About this increase"	
Page 2	BENEFIT PERIOD	To allow for the flexibility to show the policy's current Benefit Period.  Depending on the policy series, the Benefit Period can be one of the following: 2 years, 3 years, 4 years, 5 years, 6 years, 10 years or Lifetime.
Page 2	DAILY BENEFIT AMOUNT / CURRENT DBA	To allow for the flexibility to show the policy's current Daily Benefit Amount.
Page 2	ELIMINATION PERIOD	To allow for the flexibility to show the policy's current Elimination Period.  Depending on the policy series, the Elimination Period can be one of the following: 0 Days, 30 Days, 60 Days, 90 Days or 180 Days.
Page 2	INFLATION PROTECTION	To allow for the flexibility to show the policy's current Inflation Protection benefit (if any).  Depending on the policy series, the Inflation Protection can be one of the following: None, 3% Compound, 5% Compound, 5% Simple.
Pages 2 & 3	[MODE]	To allow for the flexibility to show the current premium mode for the policy.

		The premium mode can be one of the following: Annual, Semi-Annual, Quarterly, Monthly PAC.
Page 2	YOUR OLD PREMIUM [\$999.99]	To allow for the flexibility to show the current premium amount for the policy.
Page 2	YOUR NEW PREMIUM [\$999.99]	To allow for the flexibility to show the new premium amount for the policy.  The new premium amount shown on page 2 represents the premium amount based on the current policy design.
Page 2	PERCENTAGE INCREASE IN PREMIUM [999.9%]	To allow for the flexibility to show the percentage increase in premium for the policy due to the rate increase.
Page 2	PARAGRAPH BEGINNING WITH “IMPORTANT NOTICE REGARDING WAIVER OF PREMIUM”	To allow for the flexibility to delete this paragraph if the policy is not on waiver of premium status.
Page 2	[BENEFIT] SCHEDULE PAGE	To allow for the flexibility to replace “Benefit” with “Policy” to be consistent with the wording in the policy. Some policy series call this a Benefit Schedule and some call it a Policy Schedule.
Page 3	REMOVE OR REDUCE OPTIONAL RIDERS & RIDER NAMES	To allow for the flexibility to show which Rider(s), if any, are attached to the policy. If there are no Riders attached to the policy, the bullet point beginning with “Remove or reduce optional riders” will be removed.  If one Rider is attached to the policy, then the name of that Rider will appear where “Rider Name 1” is shown, and “Rider Name 2” and “Rider Name 3” will be deleted.  If two Riders are attached to the policy, then the name of those Riders will appear where “Rider Name 1” and “Rider Name 2” are shown, and “Rider Name 3” will be deleted.  If 3 or more Riders are attached to the policy, each Rider name will be displayed. Although the example provides for 3 Riders, there can be up to 10

		Riders displayed.
Page 3	SENTENCE REGARDING PARTNERSHIP	To allow for the flexibility to delete if the policy is not a participant in the Contract State's partnership program.
Page 3	SENTENCE REGARDING COVERED PARTNER BENEFIT	To allow for the flexibility to delete if the policy does not have a covered partner rider attached to it.
Page 3	SENTENCE REGARDING NUMBER OF REMAINING PREMIUMS	To allow for the flexibility to delete if the policy is not a limited pay policy.
Page 4	CONTINGENT BENEFIT UPON LAPSE OPTION OR NONFORFEITURE RIDER	<p>To allow for the flexibility to delete the "Contingent Benefit Upon Lapse option" in #3 under "What you need to do" if there is a Nonforfeiture Rider attached to the policy.</p> <p>To allow for the flexibility to delete the "Nonforfeiture Rider" option in #3 under "What you need to do" if there is not a Nonforfeiture Rider attached to the policy.</p>
Page 4	NOTE REGARDING NONFORFEITURE RIDER	To allow for the flexibility to delete this note if there is not a Nonforfeiture Rider attached to the policy.
Page 4	NOTE REGARDING CONTINGENT BENEFIT UPON LAPSE OPTION	To allow for the flexibility to delete this note if there is a Nonforfeiture Rider attached to the policy.
Page 4	IMPORTANT NOTE ABOUT BILLING	To allow for the flexibility to delete this note if the policy does not have a direct billing mode for premium payment.
Page 4	IMPORTANT NOTE ABOUT PRE-AUTHORIZED CHECKING (PAC) WITHDRAWALS	To allow for the flexibility to delete this note if the policy does not have pre-authorized checking withdrawal for premium payment.
Page 5	EXECUTIVE	To allow for the flexibility to show the first and last name of the individual designated to sign this letter.



Page 5	TITLE	To allow for the flexibility to show the title of the individual designated to sign this letter.
Page 5	AGENT NAME	To allow for the flexibility to show the name of the agent associated with this policy.
Page 5	&	To allow for the flexibility to show an “&” between the Agent Name and the Insured Name.
Page 5	INSURED NAME	To allow for the flexibility to show the name of the insured associated with this policy.  If the insured and the policyowner are the same, then this language will not appear.
Page 5	AGENCY NAME	To allow for the option to print the agency name and to allow for the option to not print the agency name.
Page 5	AGENT PHONE	To allow for the flexibility to show the agent phone number.
Page 6	The following 4 entries pertain to the section that provides Important Information about the Contingent Benefit Upon Lapse Option	
Page 6	IMPORTANT INFORMATION ABOUT THE CONTINGENT BENEFIT UPON LAPSE OPTION	To allow for the flexibility to delete if the policy has a Nonforfeiture Rider attached.
Page 6	[TOTAL] BENEFIT AMOUNT	To allow for the flexibility to delete “Total” if the defined term in the policy is Benefit Amount, and not Total Benefit Amount.
Page 6	PARAGRAPH ON LIMITED PAY POLICY	To allow for the flexibility to delete if ANY of the following are NOT true: <ul style="list-style-type: none"> <li>- The policy is limited pay;</li> <li>- The policy has a limited pay Contingent Benefit Upon Lapse Endorsement attached to the policy; or</li> <li>- The rate increase is large enough to trigger the benefit under the limited pay Contingent Benefit Upon Lapse Endorsement that is</li> </ul>

		attached to the policy.
Page 6	THIS PAGE INTENTIONALLY LEFT BLANK	To allow for the flexibility to delete if the Important Information about the Contingent Benefit Upon Lapse Option section is included.



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August 30, 2018

Honorable Scott A. White  
Commissioner of Insurance  
Virginia Bureau of Insurance (Bureau)

*Via SERFF*

**Re: Massachusetts Mutual Life Insurance Company (MassMutual)**  
**Company NAIC # 65935**  
**SERFF Tracking # MILL-131569310**

<b>200 Series</b>	
<b>Tax-Qualified Long-Term Care Policy Form</b>	<b>MM-200-P-VA et al.</b>
<b>300 Series</b>	
<b>Tax-Qualified Long-Term Care Policy Form</b>	<b>MM-300-P-VA et al.</b>
<b>400 Series</b>	
<b>Tax-Qualified Long-Term Care Policy Form</b>	<b>MM-400-P-VA et al.</b>
<b>500 Series</b>	
<b>Tax-Qualified Comprehensive Long-Term Care Policy Form</b>	<b>MM500-P-VA et al.</b>
<b>Tax-Qualified Facility Only Long-Term Care Policy Form</b>	<b>MM501-P-VA et al.</b>
<b>511 Series</b>	
<b>Tax-Qualified Comprehensive Long-Term Care Policy Form</b>	<b>MM500-P-1-VA et al.</b>
<b>Tax-Qualified Facility Only Long-Term Care Policy Form</b>	<b>MM501-P-1-VA et al.</b>

Dear Commissioner White:

On behalf of MassMutual, we are submitting the referenced rate filing for your review. These are existing tax-qualified policy forms that provide long-term care coverage. These policy forms were written by MassMutual and issued in Virginia between July 19, 2000 and October 17, 2013. The forms are no longer being marketed in any jurisdiction.

The company is requesting a premium rate increase on the above-listed forms, including all associated riders. These forms are in need of a premium rate increase due to emerging and projected experience running more adverse than previously expected.

The company is requesting a premium rate increase to achieve a rate level consistent with that on its currently marketed 513 Series new business product. The resulting rate increase varies by rate series and all available options and riders. This rate increase is then capped on a seriatim basis such that no insured will receive a rate increase in excess of 100%. The following table provides the distribution, range, and average requested rate increase in Virginia by rate series.

Offices in Principal Cities Worldwide

This work product was prepared solely to provide assistance to MassMutual. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends recipient be aided by its own actuary or other qualified professional when reviewing the Milliman work product.

**Virginia Rate Increase Request Distribution, Range, and Average Increase by Series<sup>[1]</sup>**

Rate Increase	All Series	200	300	400	500	511
0-10%	<1%	0%	0%	0%	1%	<1%
11-20%	1	0	<1	0	2	14
21-30%	4	1	<1	1	6	35
31-40%	6	1	1	2	12	33
41-50%	4	1	1	4	11	11
51-60%	4	2	1	3	9	6
61-70%	3	3	1	3	7	0
71-80%	3	3	2	4	6	0
81-90%	3	2	3	6	5	0
91-100%	71	87	92	77	41	0
Minimum	0	23	17	22	0	10
Maximum	100	100	100	100	100	52
Average	82	95	97	92	72	33

*[1] As of December 31, 2016 and excludes policies assumed to be paid-up prior to rate increase implementation.*

There have been no previous rate revisions on the above-referenced forms. The company is seeking a rate increase at this time to help alleviate the adverse performance on this business.

The company will offer insureds affected by the premium increase the option of reducing their policy benefits to provide flexibility of choice for those insureds who wish to maintain a premium level reasonably similar to what they were paying prior to the rate increase. The company will offer a contingent benefit upon lapse to insureds that trigger a substantial rate increase. Additionally, the company will voluntarily offer a contingent benefit upon lapse to insureds affected by the rate increase, even if the increase is not considered substantial.

Enclosed with this submission is a policyowner notification letter, provided by the company, which is in compliance with 14VAC5-200-75. Enclosed with this submission are the appropriate statement of variability, certification of compliance, and readability certification for the form, as required.

The following items are included with this submission:

- cover letter
- Rate Review Requirements Checklist
- Long Term Care Insurance Rate Request Summary
- letter from MassMutual authorizing us to submit this filing on their behalf
- actuarial memorandum
- supplement to the actuarial memorandum
- original pricing actuarial memoranda
- Microsoft Excel spreadsheet containing numerical data
- "Recouping Past LTC Losses" Article from April 2017 Long-Term Care News
- current premium rate schedules
- proposed premium rate schedules
- sample policyowner notification letter
- statement of variability
- certificate of compliance
- readability certification

No filing fee is required for this submission.



Honorable Scott A. White  
8/30/2018

The contact person for this filing is:

Shawn Stender  
Assistant Actuary  
Milliman, Inc.  
8500 Normandale Lake Blvd., Suite 1850  
Minneapolis, MN 55437  
(952) 820-3104  
shawn.stender@milliman.com

Thank you for your assistance in reviewing this filing.

Respectfully,

A handwritten signature in blue ink that reads "Missy Gordon". The signature is fluid and cursive.

Missy Gordon, FSA, MAAA  
Principal and Consulting Actuary

MAG/mba

Enclosures

**MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY**

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<u>Product</u>	<u>Number</u>
200 Series	
Tax-Qualified Long-Term Care Policy Form	MM-200-P-VA et al.
300 Series	
Tax-Qualified Long-Term Care Policy Form	MM-300-P-VA et al.
400 Series	
Tax-Qualified Long-Term Care Policy Form	MM-400-P-VA et al.
500 Series	
Tax-Qualified Comprehensive Long-Term Care Policy Form	MM500-P-VA et al.
Tax-Qualified Facility Only Long-Term Care Policy Form	MM501-P-VA et al.
511 Series	
Tax-Qualified Comprehensive Long-Term Care Policy Form	MM500-P-1-VA et al.
Tax-Qualified Facility Only Long-Term Care Policy Form	MM501-P-1-VA et al.

The experience provided in this supplement reflects the pooled experience of the policy forms listed above as well as the nationwide experience across the five rate series. Section 15 of the actuarial memorandum provides a description as to the appropriateness of pooling the experience of these policy forms.

Virginia-specific experience provided in this supplement is not considered fully credible, but is being provided as required or commonly requested.

**1. Purpose of Supplement**

This supplement provides additional items required by Virginia Regulation, the Rate Review Requirements Checklist (RRRC), and information commonly requested by the Bureau in its review of long-term care rate filings. The remainder of this supplement provides information regarding the request on the above-referenced products as shown in the enclosed actuarial memorandum. It may not be appropriate for other purposes.

**2. Dual Loss Ratio Requirement (14VAC5-200-150.B)**

Attachment 1 to this supplement demonstrates the dual loss ratio requirement for nationwide business regardless of issue date. This attachment shows that the sum of the accumulated value of incurred claims without the inclusion of active life reserves, and the present value of projected incurred claims, without the inclusion of active life reserves, will not be less than the sum of the following:

1. Accumulated value of the historical earned premium times the greater of 60% or the lifetime loss ratio used in original pricing;
2. Present value of future projected earned premium without the requested rate increase, times the greater of 60% or the lifetime loss ratio used in original pricing; and
3. Present value of future projected earned premium with the requested rate increase in excess of the future projected earned premium without the requested rate increase, times 80%.

As required, present and accumulated values in Attachment 1 are determined at the maximum valuation interest rate, which varies by issue year from 3.5% to 4.5% and averages 4.1%.

The following table demonstrates that the dual loss ratio requirement is passed by each series when using the most-likely assumptions described in Section 6 of the actuarial memorandum. The 'All' row corresponds to that shown in Attachment 1. Values in the table are shown in millions of dollars.

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**Dual Loss Ratio Requirement by Series (\$ in millions)**

<b>Series</b>	<b>Item 4<sup>[1]</sup></b>	<b>Item 6<sup>[2]</sup></b>	<b>Result<sup>[3]</sup></b>
All	\$3,632	\$6,339	Pass
200	948	1,866	Pass
300	843	1,701	Pass
400	778	1,322	Pass
500 <sup>[4]</sup>	823	1,139	Pass
511	288	311	Pass

*[1] Item 4 is the Lifetime Earned Premium Times Prescribed Factor.*

*[2] Item 6 is Lifetime Incurred Claims with Rate Increase.*

*[3] Test of whether Item 6 is not less than Item 4.*

*[4] 500 Series uses 60% in place of lifetime loss ratio used in original pricing of 58%. As such, the sum of each Series will not add up to the 'All' row.*

The requested rate increase for each series complies with the Application of New Loss Ratio Standard as shown in Attachment 1 and the table above.

**3. Nationwide and Virginia Projected and Historical Experience (14VAC5-130-70.B.6 and RRRC)**

Attachments 2 and 3 provide actual and projected nationwide and Virginia-specific experience, respectively. Included are calendar year earned premiums, incurred claims, paid claims, change in active life reserves, annual loss ratios, annual loss ratios with change in reserve, end of year lives, and cumulative loss ratios. The annual loss ratio with change in reserves is equal to the sum of incurred claims and the change in active life reserves divided by earned premium as defined by 14VAC5-130-70.B.6.d.

Nationwide experience is the basis for determining the requested rate increase. Section 2 of the enclosed actuarial memorandum provides a description of the nationwide rate revision.

**4. Description of Loss Ratio Calculation (14VAC5-130-70.B.10)**

The lifetime loss ratio is calculated as the sum of accumulated past and discounted future claims divided by the sum of accumulated past and discounted future earned premium. The future loss ratio is calculated as anticipated claims divided by earned premiums. Historical experience is shown by claim incurral year with the loss ratio for each loss year calculated using the following formula.

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$$LR_j = \frac{\sum_k \sum_t {}_jPmt_t^k * v^{t-k} + \sum_k {}_jCR_{ValDate}^k * v^{ValDate-k}}{EP_j}$$

$LR_j$  = loss ratio for year j

${}_jPmt_t^k$  = claim payments at time t on claims incurred at time k in year j

${}_jCR_{ValDate}^k$  = open claim reserve held on December 31, 2017 for claims incurred at time k in year j; claim reserve is the sum of disabled life reserve and IBNR reserve; IBNR reserve is zero as runout and claim reserve balances as of December 31, 2017 are used

$EP_j$  = earned premium in year j

$ValDate$  = December 31, 2017

$j$  = year of claim incurral

$k$  = date of claim incurral

$t$  = actual date of claim payment

$v = 1 / d$  = where d is the maximum valuation interest rate at time of claim incurral (ranges from 3.5% to 4.5%)

**5. Nationwide and Virginia Bifurcated Experience (Commonly Requested)**

Attachments 4 and 5 provide the same information as Attachment 1, except uses the experience for policy forms issued before October 1, 2003 for both nationwide and Virginia-specific experience, respectively.

Attachments 6 and 7 provide the same information as Exhibit II of the actuarial memorandum (i.e., the 58%/85% test), except uses the experience for policy forms issued on or after October 1, 2003 for both nationwide and Virginia-specific experience, respectively.

**6. Additional Commonly Requested Information**

The remainder of this letter provides information commonly requested by the Bureau. Each request is restated in italics for reference.

- i. *Please provide a copy of the original actuarial memorandum, including original pricing assumptions, original anticipated loss ratio, and mix of business.*

Enclosed with this letter are the original pricing memoranda for each rate series which include the original assumptions, anticipated loss ratio, and mix of business information that is available.

- ii. *For all projections requested below, please comply with the following:*
- a) *Please remove any policies in paid-up status from all projections, both past and future.*
  - b) *Please use the average maximum valuation interest rate for accumulation and discounting, including any discounting of claim reserves back to the incurral year.*
  - c) *Please re-compute nationwide earned premiums to assume Virginia rate levels (both the past and proposed rate changes in Virginia).*

The historical and projected experience below has been provided as requested by capturing the following:

- a. Including policies with a lifetime premium payment option only, which removes any policies in paid-up status from the past and future.



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- b. The discounting and accumulation uses the maximum valuation interest rate for contract reserves applicable to the year of issue (ranges from 3.5% to 4.5% and averages 4.1%), including the discounting of claims to the incurral year.
  - c. Restating is not applicable because no prior increases have been implemented on these products in Virginia or nationwide.
- iii. *For each of the eight subsets of the business corresponding to the combinations of (pre-stability/post-stability), ([non-lifetime]/[lifetime] benefit periods) and (none/auto-inflation protection), please provide (in Excel format) the following six projections (48 total):*
- a. *current assumptions and current rates*
  - b. *current assumptions with the proposed rate increase*
  - c. *current assumptions with the proposed rate increase, but with no RBO, CBUL, or adverse selection*
  - d. *current assumptions with premiums restated as if the proposed rate schedule had been in effect from inception*
  - e. *original assumptions and original premiums from inception*
  - f. *actual past experience (claims, mortality, lapse) but original assumptions in the future, with all premiums at the original premium scale from inception*

Attachments 8 through 15 to this letter provide experience for policies with the requirements outlined in item (ii) above and with the following benefit combinations:

- 8. Non-lifetime benefit periods with no inflation protection issued prior to October 1, 2003
- 9. Non-lifetime benefit periods with auto-inflation protection issued prior to October 1, 2003
- 10. Lifetime benefit periods with no inflation protection issued prior to October 1, 2003
- 11. Lifetime benefit periods with auto-inflation protection issued prior to October 1, 2003
- 12. Non-lifetime benefit periods with no inflation protection issued on or after October 1, 2003
- 13. Non-lifetime benefit periods with auto-inflation protection issued on or after October 1, 2003
- 14. Lifetime benefit with no inflation protection issued on or after October 1, 2003
- 15. Lifetime benefit with auto-inflation protection issued on or after October 1, 2003

Each of the eight attachments includes the requested six projections labeled as A through F. The original pricing assumptions used in E and F appear in Exhibit III of the actuarial memorandum.

These 48 attachments include calendar year earned premiums, incurred claims, annual loss ratios, end of year lives, and cumulative loss ratios. Also included are undiscounted paid claims and year-end claim reserve balances as requested below in item (vi). Please note that none of the experience splits provided in these attachments are considered fully credible, but are being provided as requested. These attachments are also provided in the enclosed Excel workbook, as requested.

We note that E and F use the original pricing assumptions, except for interest. When demonstrating compliance with minimum loss ratio requirements, it is appropriate to use the maximum valuation rate as specified in Virginia regulation. However, when comparing current to original pricing loss ratios it is appropriate to use a rate basis consistent with that used in the development of the original premiums (i.e., earnings or maximum valuation) in order to capture deviations in interest.

Interest is an important assumption in the development of premiums. Regulation that was in effect at the time of pricing did not prohibit interest deviations. If at the time of pricing deviations in interest was not permitted, then additional margin (lower interest) would have been used in the development of premiums. Furthermore, if consumers were to self-fund, they would also be exposed to investment risk and if their invested assets did not grow at the rate expected, they too may not have sufficient funds to cover their future long-term care costs. If consumers were not able to achieve as high of a spread as MassMutual, then the decrease in the economic

**MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY****Address:** 1295 State Street, Springfield, MA 01111**Supplement to the Series Actuarial Memorandum****August 30, 2018**

environment may have hurt consumers more had they self-funded their long-term care risk rather than purchasing insurance through MassMutual.

The table below provides the nationwide lifetime loss ratios for the experience similar to that provided in Attachments A, B, and E of Attachments 8 through 15, except uses a current interest assumption on a basis that is consistent with original pricing, rather than a maximum valuation interest rate basis. For the pre-500 business, original pricing used an earnings interest rate basis; a current earnings interest rate assumption of 5.0% is used in table below. For the 500+ business, original pricing used a valuation interest rate basis, so a current maximum valuation interest rate assumption as described above in Section 6 of the actuarial memorandum is used in the table below.

**Actual-to-Expected Lifetime Loss Ratios**

Issued On or After October 1, 2003	Benefit Period	Inflation Option	Lifetime Loss Ratio			Actual-to-Expected	
			Before Increase <sup>[1]</sup>	After Increase <sup>[1]</sup>	Expected <sup>[2]</sup>	Before Increase	After Increase
No	Non-Lifetime	None	74%	68%	45%	1.65	1.51
No	Non-Lifetime	Auto	124	94	56	2.23	1.69
No	Lifetime	None	104	86	47	2.23	1.83
No	Lifetime	Auto	197	141	57	3.48	2.49
Yes	Non-Lifetime	None	65	56	51	1.26	1.09
Yes	Non-Lifetime	Auto	112	82	63	1.77	1.30
Yes	Lifetime	None	84	65	43	1.96	1.50
Yes	Lifetime	Auto	175	118	56	3.10	2.09

[1] Using current interest assumption on a basis that is consistent with original pricing as described above

[2] Projected actual policies sold from issue using original pricing assumptions.

Furthermore, we believe the Bureau's intent of restating the proposed increase from inception in D is to prevent companies from recouping past losses. This approach is one of the most restrictive as it assumes the company could have had perfect knowledge at issue.

The subject and definition of "recoupment of past losses" was discussed by the NAIC Health Actuarial Task Force (HATF) in the development of the 2014 Long-Term Care Model Regulation. The Model Regulation contemplates recouping past losses in Section 20.1.C(3) for newly issued policies. Specifically, recouping past losses is limited by not allowing prior claims in excess of expected claims in the loss ratio test. Enclosed with this letter is an article titled "Recouping Past LTC Losses" that provides additional background on HATF's review of methods of defining past losses. The article was published in the April 2017 issue of the Society of Actuaries Long-Term Care Section newsletter, Long-Term Care News. It is our understanding that in developing the Model Regulation, HATF explored alternative variations of "not recouping past losses" before ultimately settling on the approach outlined above.

To demonstrate a rate increase is not recouping past losses, actuaries must use the lesser of actual and expected past claims in demonstrating compliance with loss ratio and rate stability requirements.

If Exhibit II of the actuarial memorandum were revised to reflect this change in past claims described in Section 20.1.C(3), the requested rate increase would still pass the 58%/85% minimum loss ratio requirement. To demonstrate compliance, the rate increase passes the test even if the historical incurred claims are set to \$0. This is an extremely simplified and easily created demonstration that shows the rate increase is not recouping past losses. Modeling the expected incurred claims as described in Section 20.1.C(3) (rather than simplified \$0) results in passing the test to an even greater extent. A similar argument is also true relative to passing the 60% loss ratio minimum.

Additionally, the NAIC Long-Term Care Pricing Subgroup (Pricing Subgroup) has been recently discussing alternate approaches to calculate increases that do not recoup past losses. The test of restating the requested rate increase from inception is not one of the tests being discussed by the Pricing Subgroup.

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- iv. *For each of the [eight] subsets of the business above, please provide the active life reserves on a nationwide basis.*

The following table provides the active life reserves by issue date, benefit period, and inflation option on a nationwide basis for policies with lifetime premium payments only.

**Nationwide Lifetime Premium Payment Option Only  
Active Life Reserves as of December 31, 2016**

<b>Issued On or After October 1, 2003</b>	<b>Benefit Period</b>	<b>Inflation Option</b>	<b>Active Life Reserve</b>
No	Non-Lifetime	None	\$6,742,349
No	Non-Lifetime	Auto	60,613,890
No	Lifetime	None	12,242,121
No	Lifetime	Auto	245,395,937
Yes	Non-Lifetime	None	19,486,779
Yes	Non-Lifetime	Auto	241,129,974
Yes	Lifetime	None	16,424,934
Yes	Lifetime	Auto	437,420,068
All	All	All	1,039,456,053

- v. *Please specify whether waived premiums are included in earned premiums and incurred claims; provide the waived premium amounts and impact on requested increase.*

Historical waived premiums are excluded from earned premiums and incurred claims based on how the company manages the experience data. Projected waived premiums are included in earned premiums and incurred claims as required by statutory accounting for an all-lives exposure base projection model and assumptions.

Waived premiums have less than a 3% impact on the lifetime loss ratio. Given the appropriateness of capturing waived premiums in the projection and the minimal impact on the lifetime loss ratio, we have not provided the historical waived premiums, but can be provided upon request.

- vi. *Please show both the claim reserve and the paid claims separately in the projections. Please specify whether the claim reserves are fixed at the time of the claim or adjusted over time to reflect experience as it emerges. Please provide a sufficiency analysis of the actual runout experience of historical claims over time versus the claim reserves that were assumed.*

Attachments 8 through 15 show the paid claims and claim reserves as requested. The company conducts assumption reviews annually, and has a control process in place with a quarterly sign off on assumptions used in reserving and reserve adequacy testing.

The table below provides an analysis of the runout of claim reserves versus actual incurred claims. The "estimated" incurred claims for a given incurral year are equal to (a) claim reserves (IBNR + disabled life reserves) as of the end of the incurral year plus (b) any payments made in the year of claim incurral. The "actual" incurred claims for a given incurral year are equal to (a) claim reserves as of December 31, 2017 plus (b) payments made since incurral through 2017. The disabled life reserves and paid claims are discounted to the date of incurral at a maximum valuation interest. The incurred claims are consistent with those found in Exhibit I of the actuarial memorandum.

Please note that only incurral years 2013 and 2016 are available for this sufficiency test on long-term care claims; however, additional support can be provided at request of the Bureau.

**MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY**

**Address:** 1295 State Street, Springfield, MA 01111

**Supplement to the Series Actuarial Memorandum**

**August 30, 2018**

Incurral Year	"Estimated" Incurred Claims as of Incurral Year			"Actual" Incurred Claims as of 12/31/2017			(g) = (f) / (c)  "Actual" to "Estimated"
	(a) Discounted Claim Reserves	(b) Discounted Paid Claims	(c) = (a) + (b) Incurred Claims	(d) Discounted Claim Reserves	(e) Discounted Paid Claims	(f) = (d) + (e) Incurred Claims	
2013	\$22,039,373	\$1,089,267	\$23,128,640	\$9,237,960	\$16,963,309	\$26,201,269	1.13
2016	46,263,851	1,896,531	48,160,382	29,477,367	9,097,573	38,574,940	0.80

As seen in the table above, the claim reserve sufficiency varies by year, which is typical for younger blocks with limited claim experience. As discussed above, the company believes that its claim reserve assumptions are considered sufficient and adjusts these assumptions when necessary to reflect updated experience and industry trends.

- vii. *Please provide in Excel format an exhibit showing the rate increase history and status of existing rate increase requests in each state, including the cumulative approved rate increase percentage and the in force annualized premium for each state.*

Attachment 16 to this letter provides a cumulative past rate increase history as well as the status of this current nationwide request for each jurisdiction in which there is business in force as of December 31, 2016 on these and similar policy forms issued by MassMutual. Also included in the attachment are the number of policies in force and annualized premium as of December 31, 2016. Attachment 16 is also provided in the enclosed Excel workbook, as requested.

**7. Description of Attachments**

- Attachment 1: Nationwide Dual Loss Ratio Test
- Attachment 2: Nationwide Historical and Projected Experience by Calendar Year
- Attachment 3: Virginia-Specific Historical and Projected Experience by Calendar Year
- Attachment 4: Nationwide Dual Loss Ratio Test for Policies Issued Prior to October 1, 2003
- Attachment 5: Virginia-Specific Dual Loss Ratio Test for Policies Issued Prior to October 1, 2003
- Attachment 6: Nationwide 58%/85% Test for Policies Issued On or After October 1, 2003
- Attachment 7: Virginia-Specific 58%/85% Test for Policies Issued On or After October 1, 2003
- Attachment 8: Nationwide Experience for Policies Issued Prior to October 1, 2003 with Non-Lifetime Benefit Periods and No Inflation
- Attachment 9: Nationwide Experience for Policies Issued Prior to October 1, 2003 with Non-Lifetime Benefit Periods and Auto Inflation
- Attachment 10: Nationwide Experience for Policies Issued Prior to October 1, 2003 with a Lifetime Benefit Period and No Inflation
- Attachment 11: Nationwide Experience for Policies Issued Prior to October 1, 2003 with a Lifetime Benefit Period and Auto Inflation
- Attachment 12: Nationwide Experience for Policies Issued On or After October 1, 2003 with Non-Lifetime Benefit Periods and No Inflation
- Attachment 13: Nationwide Experience for Policies Issued On or After October 1, 2003 with Non-Lifetime Benefit Periods and Auto Inflation
- Attachment 14: Nationwide Experience for Policies Issued On or After October 1, 2003 with a Lifetime Benefit Period and No Inflation
- Attachment 15: Nationwide Experience for Policies Issued On or After October 1, 2003 with a Lifetime Benefit Period and Auto Inflation
- Attachment 16: State Status Listing

Enclosures: Original Pricing Memorandum  
 Microsoft Excel Spreadsheet Containing Numerical Data  
 "Recouping Past LTC Losses" Article from April 2017 Long-Term Care News

**Attachment 1**  
**Demonstration that the Requested Rate Increase Passes the Dual Loss Ratio Requirement**  
**Massachusetts Mutual Life Insurance Company Nationwide Experience**  
**All Rate Series Combined**

1	Accumulated value of initial earned premium	2,606,149,452	x	66%	=	1,708,550,012
2	Present value of future projected initial earned premium	1,718,816,688	x	66%	=	1,126,828,805
3a	Present value of future projected premium	2,714,409,444				
3b	Present value of future projected premium in excess of the projected initial earned premiums (3a - 2)	995,592,757	x	80%	=	796,474,205
<b>4</b>	<b>Lifetime Earned Premium Times Prescribed Factor: Sum of 1, 2, and 3b</b>					<b>3,631,853,022</b>
5a	Accumulated value of incurred claims without the inclusion of active life reserves					300,048,738
5b	Present value of future projected incurred claims without the inclusion of active life reserves					6,039,206,031
<b>6</b>	<b>Lifetime Incurred Claims with Rate Increase: Sum 5a and 5b</b>					<b>6,339,254,769</b>
7	Test: 6 is not less than 4					Pass

*Items 1, 3a, and 6 are consistent with the accumulated and present values shown in Exhibit I-b.*

*All accumulated or present values use the maximum valuation interest rate for contract reserves applicable for the year of issue, which ranges from 3.5% to 4.5%.*

*Item 2 reflects the impact of CBUL and RBO to align persistency with that in Item 3.*

**Attachment 2-a**  
**Massachusetts Mutual Life Insurance Company**  
**Actual and Projected Experience by Calendar Year**  
**Nationwide Experience Before Requested Rate Increase**  
**All Rate Series Combined**

	Calendar Year	Actual or Projected Experience using Current Assumptions							Cumulative Loss Ratio with interest
		A Earned Premium	B Incurred Claims	C Paid Claims	D Change in Active Life Reserves	E = B / A Incurred Loss Ratio	F = (B + D) / A Loss Ratio with Change in Active Life Reserves	G End of Year Lives	
Historical Experience	2000	613,240	0	0	0	0%	0%	1,775	0%
	2001	8,395,491	64,652	6,991	1,293,493	1%	16%	7,642	1%
	2002	21,414,123	527,514	51,876	7,436,514	2%	37%	15,522	2%
	2003	38,423,209	1,663,767	183,242	16,603,009	4%	48%	24,571	3%
	2004	58,600,776	1,499,223	556,089	27,428,226	3%	49%	34,074	3%
	2005	88,587,224	5,917,061	1,114,685	29,165,692	7%	40%	45,088	4%
	2006	108,266,631	4,124,523	1,842,521	29,520,462	4%	31%	50,082	4%
	2007	121,895,279	9,601,387	2,631,651	29,569,684	8%	32%	54,405	5%
	2008	137,228,636	9,464,000	3,863,131	29,564,451	7%	28%	58,834	6%
	2009	146,783,646	14,396,475	5,685,233	29,912,043	10%	30%	61,275	6%
	2010	157,044,149	18,532,382	7,016,165	31,443,020	12%	32%	64,748	7%
	2011	170,045,482	18,642,615	10,100,677	30,754,020	11%	29%	70,309	8%
	2012	193,342,609	23,728,913	13,034,548	29,826,405	12%	28%	77,353	8%
	2013	201,251,429	26,201,269	16,349,521	27,887,680	13%	27%	79,455	9%
	2014	196,209,517	34,432,838	20,017,393	27,883,302	18%	32%	78,588	10%
	2015	183,819,465	40,611,186	23,989,973	28,102,711	22%	37%	77,807	11%
	2016	174,917,980	38,574,940	28,847,827	29,064,041	22%	39%	77,020	12%
Projected Future Experience	2017	172,241,693	54,502,773	33,045,143	26,721,929	32%	47%	75,896	13%
	2018	165,047,886	64,573,658	39,440,779	26,083,548	39%	55%	74,783	14%
	2019	159,193,087	76,343,329	53,183,751	25,221,502	48%	64%	73,661	16%
	2020	153,983,243	89,588,731	66,502,227	24,101,697	58%	74%	72,510	17%
	2021	147,746,139	104,201,577	78,196,607	22,637,078	71%	86%	71,315	19%
	2022	137,446,581	120,433,978	91,171,435	20,852,341	88%	103%	70,064	22%
	2023	132,732,324	138,582,927	105,785,254	18,828,833	104%	119%	68,748	24%
	2024	129,872,384	158,883,088	122,193,821	16,633,713	122%	135%	67,363	26%
	2025	126,757,990	181,614,373	140,547,002	14,178,934	143%	154%	65,906	29%
	2026	123,622,884	206,607,058	160,988,270	11,422,260	167%	176%	64,374	32%
	2027	120,368,173	235,581,471	184,020,077	8,286,505	196%	203%	62,755	35%
	2028	116,967,040	269,002,445	210,215,528	4,826,717	230%	234%	61,041	39%
	2029	113,456,899	305,504,461	239,708,431	1,166,140	269%	270%	59,228	43%
	2030	109,825,829	344,664,339	272,408,420	-2,657,842	314%	311%	57,316	47%
	2031	106,008,521	386,163,349	308,145,072	-6,623,364	364%	358%	55,304	51%
	2032	101,998,825	429,058,224	346,577,976	-10,633,981	421%	410%	53,195	56%
	2033	97,852,727	473,046,524	387,336,112	-14,600,048	483%	469%	50,994	61%
	2034	93,538,391	517,519,441	429,979,629	-18,399,459	553%	534%	48,705	66%
	2035	89,062,425	560,960,575	473,808,483	-21,947,020	630%	605%	46,338	71%
	2036	84,436,790	602,251,794	517,970,219	-25,182,991	713%	683%	43,902	76%
	2037	79,713,710	640,558,320	561,574,496	-28,046,224	804%	768%	41,411	82%
	2038	74,897,097	675,013,035	603,712,566	-30,408,580	901%	861%	38,880	87%
	2039	70,011,512	704,314,318	643,365,873	-32,196,558	1,006%	960%	36,326	93%
	2040	65,100,920	727,055,899	679,359,880	-33,394,556	1,117%	1,066%	33,766	99%
	2041	60,193,802	742,866,216	710,656,440	-33,999,568	1,234%	1,178%	31,221	104%
	2042	55,333,340	751,591,594	736,435,300	-34,011,391	1,358%	1,297%	28,709	109%
	2043	50,562,872	753,035,208	756,032,970	-33,458,628	1,489%	1,423%	26,251	114%
	2044	45,918,427	747,286,278	768,974,545	-32,436,992	1,627%	1,557%	23,864	119%
	2045	41,436,080	734,525,898	774,954,374	-30,980,974	1,773%	1,698%	21,566	124%
	2046	37,149,904	715,189,527	773,878,639	-29,164,352	1,925%	1,847%	19,373	128%
	2047	33,089,359	689,963,515	765,851,955	-27,080,427	2,085%	2,003%	17,298	132%
	2048	29,278,136	659,215,478	751,099,688	-24,832,990	2,252%	2,167%	15,351	136%
	2049	25,733,967	624,218,429	730,122,156	-22,504,529	2,426%	2,338%	13,540	139%
	2050	22,468,351	585,694,514	703,557,896	-20,177,113	2,607%	2,517%	11,871	142%
	2051	19,487,186	545,003,489	672,227,470	-17,897,294	2,797%	2,705%	10,344	145%
	2052-2056	62,359,938	2,096,396,469	2,786,609,687	-59,744,902	3,362%	3,266%	33,661	154%
	2057-2061	25,527,035	1,172,994,097	1,777,077,387	-25,302,817	4,595%	4,496%	14,417	158%
	2062-2066	9,257,249	561,639,676	967,438,650	-8,436,957	6,067%	5,976%	5,517	160%
	2067-2071	3,137,808	234,707,490	460,838,853	-2,022,721	7,480%	7,416%	1,949	161%
	2072-2076	1,014,695	85,792,699	194,455,814	-274,955	8,455%	8,428%	651	161%

**With Interest Accum./Disc. To 12/31/2016**

History	2,606,149,452	300,048,738	158,143,217	413,752,205	12%	27%
Future	2,054,217,459	7,196,453,881	6,940,538,712	-413,783,784	350%	330%
Lifetime	4,660,366,911	7,496,502,619	7,098,681,929	-31,579	161%	161%

**Attachment 2-b**  
**Massachusetts Mutual Life Insurance Company**  
**Actual and Projected Experience by Calendar Year**  
**Nationwide Experience After Requested Rate Increase**  
**All Rate Series Combined**

	Calendar Year	Actual or Projected Experience using Current Assumptions							Cumulative Loss Ratio with interest
		A Earned Premium	B Incurred Claims	C Paid Claims	D Change in Active Life Reserves	E = B / A Incurred Loss Ratio	F = (B + D) / A Loss Ratio with Change in Active Life Reserves	G End of Year Lives	
Historical Experience	2000	613,240	0	0	0	0%	0%	1,775	0%
	2001	8,395,491	64,652	6,991	1,293,493	1%	16%	7,642	1%
	2002	21,414,123	527,514	51,876	7,436,514	2%	37%	15,522	2%
	2003	38,423,209	1,663,767	183,242	16,621,717	4%	48%	24,571	3%
	2004	58,600,776	1,499,223	556,089	29,676,457	3%	53%	34,074	3%
	2005	88,587,224	5,917,061	1,114,685	46,541,092	7%	59%	45,088	4%
	2006	108,266,631	4,124,523	1,842,521	69,821,668	4%	68%	50,082	4%
	2007	121,895,279	9,601,387	2,631,651	83,141,534	8%	76%	54,405	5%
	2008	137,228,636	9,464,000	3,863,131	93,747,313	7%	75%	58,834	6%
	2009	146,783,646	14,396,475	5,685,233	104,021,591	10%	81%	61,275	6%
	2010	157,044,149	18,532,382	7,016,165	115,042,287	12%	85%	64,748	7%
	2011	170,045,482	18,642,615	10,100,677	126,514,374	11%	85%	70,309	8%
	2012	193,342,609	23,728,913	13,034,548	142,408,085	12%	86%	77,353	8%
	2013	201,251,429	26,201,269	16,349,521	160,341,878	13%	93%	79,455	9%
	2014	196,209,517	34,432,838	20,017,393	164,111,911	18%	101%	78,588	10%
	2015	183,819,465	40,611,186	23,989,973	159,840,523	22%	109%	77,807	11%
	2016	174,917,980	38,574,940	28,847,827	159,350,246	22%	113%	77,020	12%
Projected Future Experience	2017	172,241,693	54,502,773	33,045,143	152,639,426	32%	120%	75,896	13%
	2018	165,047,886	64,573,658	39,440,779	150,283,752	39%	130%	74,783	14%
	2019	193,905,673	69,864,427	51,777,911	-176,523,927	36%	-55%	69,593	15%
	2020	219,884,359	74,797,204	61,677,736	119,157,169	34%	88%	68,507	16%
	2021	209,608,788	86,868,963	69,833,458	114,740,523	41%	96%	67,380	18%
	2022	192,251,573	100,252,490	79,409,242	108,093,871	52%	108%	66,200	19%
	2023	185,256,046	115,223,460	90,681,409	104,849,854	62%	119%	64,959	21%
	2024	181,165,775	131,965,598	103,641,208	100,704,478	73%	128%	63,654	22%
	2025	176,650,552	150,706,199	118,348,185	95,383,303	85%	139%	62,280	24%
	2026	172,174,308	171,313,984	134,889,548	89,041,657	100%	151%	60,835	26%
	2027	167,573,253	195,218,527	153,645,651	81,257,201	116%	165%	59,310	29%
	2028	162,766,675	222,801,144	175,078,540	71,929,029	137%	181%	57,693	31%
	2029	157,844,724	252,934,816	199,291,899	61,453,923	160%	199%	55,984	34%
	2030	152,798,932	285,289,591	226,205,076	49,737,199	187%	219%	54,182	37%
	2031	147,499,211	319,603,964	255,670,003	36,855,676	217%	242%	52,285	40%
	2032	141,934,047	355,112,169	287,401,940	23,035,887	250%	266%	50,298	43%
	2033	136,199,570	391,578,105	321,094,203	8,396,039	288%	294%	48,223	47%
	2034	130,229,439	428,512,082	356,387,525	-6,751,782	329%	324%	46,065	50%
	2035	124,031,369	464,671,676	392,710,189	-22,426,330	375%	357%	43,834	54%
	2036	117,615,741	499,147,320	429,366,087	-38,182,529	424%	392%	41,537	58%
	2037	111,075,348	531,236,282	465,624,180	-53,598,669	478%	430%	39,188	62%
	2038	104,402,975	560,226,140	500,737,152	-68,395,217	537%	471%	36,801	66%
	2039	97,626,961	585,041,762	533,866,984	-82,220,766	599%	515%	34,391	70%
	2040	90,813,881	604,503,781	564,041,011	-94,829,482	666%	561%	31,976	74%
	2041	83,998,197	618,268,543	590,392,741	-105,868,608	736%	610%	29,574	78%
	2042	77,243,782	626,199,721	612,235,149	-114,995,220	811%	662%	27,203	81%
	2043	70,608,758	628,123,912	629,009,583	-122,241,308	890%	716%	24,881	85%
	2044	64,143,595	624,119,494	640,319,389	-127,414,298	973%	774%	22,627	88%
	2045	57,898,999	614,301,538	645,901,781	-130,606,076	1,061%	835%	20,456	92%
	2046	51,922,915	598,999,614	645,663,777	-131,770,829	1,154%	900%	18,383	95%
	2047	46,256,958	578,751,855	639,672,844	-131,046,333	1,251%	968%	16,421	98%
	2048	40,934,871	553,860,871	628,097,929	-128,646,659	1,353%	1,039%	14,580	100%
	2049	35,982,176	525,379,988	611,338,361	-124,794,571	1,460%	1,113%	12,866	103%
	2050	31,415,738	493,889,217	589,909,545	-119,748,928	1,572%	1,191%	11,285	105%
	2051	27,244,607	460,485,896	564,473,873	-113,702,800	1,690%	1,273%	9,839	107%
	2052-2056	87,099,966	1,782,225,558	2,351,265,297	-457,533,354	2,046%	1,521%	32,070	114%
	2057-2061	35,505,612	1,008,831,723	1,513,866,684	-271,225,828	2,841%	2,077%	13,781	117%
	2062-2066	12,782,679	488,059,780	832,402,692	-134,742,891	3,818%	2,764%	5,290	119%
	2067-2071	4,292,602	205,074,360	399,672,440	-57,606,949	4,777%	3,435%	1,874	119%
	2072-2076	1,372,527	74,896,024	169,338,294	-21,860,095	5,457%	3,864%	627	119%

**With Interest Accum./Disc. To 12/31/2016**

History	2,606,149,452	300,048,738	158,143,217	1,510,240,799	12%	69%
Future	2,714,409,444	6,039,206,031	5,837,920,952	-1,509,170,624	222%	167%
Lifetime	5,320,558,896	6,339,254,769	5,996,064,169	1,070,175	119%	119%

**Attachment 3-a**  
**Massachusetts Mutual Life Insurance Company**  
**Actual and Projected Experience by Calendar Year**  
**Virginia-Specific Experience Before Requested Rate Increase**  
**All Rate Series Combined**

	Calendar Year	Actual or Projected Experience using Current Assumptions							Cumulative Loss Ratio with interest
		A Earned Premium	B Incurred Claims	C Paid Claims	D Change in Active Life Reserves	E = B / A Incurred Loss Ratio	F = (B + D) / A Loss Ratio with Change in Active Life Reserves	G End of Year Lives	
Historical Experience	2000	35,559	0	0	0	0%	0%	88	0%
	2001	381,361	0	0	74,828	0%	20%	325	0%
	2002	953,429	1,728	0	345,067	0%	36%	857	0%
	2003	2,409,731	110,403	13,212	879,132	5%	41%	1,719	3%
	2004	4,002,622	784	49,389	1,827,640	0%	46%	2,453	1%
	2005	6,443,339	18,288	61,313	2,017,867	0%	32%	3,362	1%
	2006	7,854,472	197,553	19,142	2,046,121	3%	29%	3,724	1%
	2007	8,827,498	21,083	117,427	2,036,577	0%	23%	4,030	1%
	2008	9,744,889	20,058	46,430	2,093,531	0%	22%	4,323	1%
	2009	10,366,796	551,758	100,285	2,103,821	5%	26%	4,459	2%
	2010	10,876,869	1,115,311	115,804	2,185,426	10%	30%	4,612	3%
	2011	11,506,728	1,285,831	219,237	2,251,143	11%	31%	4,906	4%
	2012	12,782,316	1,527,503	598,403	2,283,666	12%	30%	5,313	5%
	2013	13,273,561	385,813	742,514	2,225,453	3%	20%	5,411	5%
	2014	12,851,594	3,052,371	876,662	2,140,550	24%	40%	5,344	7%
	2015	11,806,200	3,146,611	1,284,262	2,377,010	27%	47%	5,301	8%
	2016	11,143,543	2,139,130	1,978,114	2,179,410	19%	39%	5,241	9%
Projected Future Experience	2017	10,999,375	3,482,847	1,984,164	2,172,495	32%	51%	5,170	10%
	2018	10,621,097	4,169,518	2,425,809	2,154,997	39%	60%	5,098	12%
	2019	10,256,192	4,979,169	3,306,004	2,120,372	49%	69%	5,025	13%
	2020	9,967,624	5,912,666	4,205,987	2,067,333	59%	80%	4,950	15%
	2021	9,642,324	6,942,969	5,023,227	1,992,670	72%	93%	4,871	17%
	2022	9,059,969	8,092,625	5,929,184	1,881,804	89%	110%	4,789	19%
	2023	8,804,151	9,398,691	6,966,714	1,760,908	107%	127%	4,702	22%
	2024	8,634,503	10,867,008	8,141,966	1,619,340	126%	145%	4,610	25%
	2025	8,434,820	12,543,351	9,467,390	1,454,024	149%	166%	4,513	27%
	2026	8,241,453	14,399,925	10,956,332	1,260,946	175%	190%	4,411	31%
	2027	8,036,453	16,563,823	12,646,833	1,032,662	206%	219%	4,303	34%
	2028	7,813,264	19,073,479	14,582,245	772,285	244%	254%	4,189	38%
	2029	7,585,393	21,873,544	16,783,215	487,430	288%	295%	4,067	42%
	2030	7,348,478	24,897,618	19,247,528	180,778	339%	341%	3,938	46%
	2031	7,101,465	28,146,094	21,968,196	-144,177	396%	394%	3,802	51%
	2032	6,839,522	31,541,587	24,923,043	-483,049	461%	454%	3,659	56%
	2033	6,569,849	35,025,551	28,079,298	-829,202	533%	521%	3,509	62%
	2034	6,283,421	38,565,363	31,403,115	-1,174,018	614%	595%	3,353	68%
	2035	5,990,353	42,022,630	34,834,809	-1,508,978	702%	676%	3,191	73%
	2036	5,678,659	45,332,194	38,309,141	-1,824,786	798%	766%	3,023	80%
	2037	5,365,790	48,408,882	41,755,071	-2,114,174	902%	863%	2,852	86%
	2038	5,046,261	51,191,813	45,099,591	-2,364,922	1,014%	968%	2,677	92%
	2039	4,721,379	53,578,198	48,260,711	-2,570,735	1,135%	1,080%	2,501	98%
	2040	4,393,633	55,441,807	51,144,074	-2,726,083	1,262%	1,200%	2,324	105%
	2041	4,065,241	56,768,673	53,667,440	-2,824,587	1,396%	1,327%	2,148	111%
	2042	3,739,843	57,536,142	55,772,103	-2,866,586	1,538%	1,462%	1,974	117%
	2043	3,419,765	57,704,354	57,400,324	-2,853,185	1,687%	1,604%	1,804	123%
	2044	3,107,839	57,229,261	58,498,275	-2,795,055	1,841%	1,752%	1,639	128%
	2045	2,806,551	56,258,949	59,052,799	-2,696,084	2,005%	1,908%	1,480	133%
	2046	2,518,352	54,789,378	59,061,795	-2,557,026	2,176%	2,074%	1,329	138%
	2047	2,245,385	52,886,602	58,543,712	-2,387,489	2,355%	2,249%	1,185	143%
	2048	1,989,156	50,541,449	57,510,304	-2,198,674	2,541%	2,430%	1,051	147%
	2049	1,750,891	47,856,312	55,993,333	-1,997,617	2,733%	2,619%	927	151%
	2050	1,531,342	44,843,715	54,029,773	-1,789,779	2,928%	2,812%	812	154%
	2051	1,330,925	41,677,912	51,682,346	-1,581,462	3,131%	3,013%	707	157%
	2052-2056	4,291,343	160,117,748	214,869,665	-5,134,055	3,731%	3,612%	2,296	168%
	2057-2061	1,786,881	90,406,822	138,158,495	-1,950,820	5,059%	4,950%	982	173%
	2062-2066	660,401	43,837,165	76,035,707	-541,727	6,638%	6,556%	377	175%
	2067-2071	225,017	18,334,004	36,377,595	-99,499	8,148%	8,104%	133	175%
	2072-2076	72,700	6,547,203	15,243,108	-11,304	9,006%	8,990%	44	176%

**With Interest Accum./Disc. To 12/31/2016**

History	176,297,355	15,707,380	7,009,253	29,668,012	9%	26%
Future	135,065,664	531,038,590	509,880,535	-29,669,168	393%	371%
Lifetime	311,363,019	546,745,969	516,889,788	-1,156	176%	176%



**Attachment 3-b**  
**Massachusetts Mutual Life Insurance Company**  
**Actual and Projected Experience by Calendar Year**  
**Virginia-Specific Experience After Requested Rate Increase**  
**All Rate Series Combined**

	Calendar Year	Actual or Projected Experience using Current Assumptions							Cumulative Loss Ratio with interest
		A Earned Premium	B Incurred Claims	C Paid Claims	D Change in Active Life Reserves	E = B / A Incurred Loss Ratio	F = (B + D) / A Loss Ratio with Change in Active Life Reserves	G End of Year Lives	
Historical Experience	2000	35,559	0	0	0	0%	0%	88	0%
	2001	381,361	0	0	74,828	0%	20%	325	0%
	2002	953,429	1,728	0	345,067	0%	36%	857	0%
	2003	2,409,731	110,403	13,212	880,122	5%	41%	1,719	3%
	2004	4,002,622	784	49,389	1,982,398	0%	50%	2,453	1%
	2005	6,443,339	18,288	61,313	3,420,921	0%	53%	3,362	1%
	2006	7,854,472	197,553	19,142	5,329,553	3%	70%	3,724	1%
	2007	8,827,498	21,083	117,427	6,211,254	0%	71%	4,030	1%
	2008	9,744,889	20,058	46,430	7,082,585	0%	73%	4,323	1%
	2009	10,366,796	551,758	100,285	7,861,234	5%	81%	4,459	2%
	2010	10,876,869	1,115,311	115,804	8,526,378	10%	89%	4,612	3%
	2011	11,506,728	1,285,831	219,237	9,266,766	11%	92%	4,906	4%
	2012	12,782,316	1,527,503	598,403	10,361,683	12%	93%	5,313	5%
	2013	13,273,561	385,813	742,514	11,417,760	3%	89%	5,411	5%
	2014	12,851,594	3,052,371	876,662	11,369,047	24%	112%	5,344	7%
	2015	11,806,200	3,146,611	1,284,262	11,483,115	27%	124%	5,301	8%
	2016	11,143,543	2,139,130	1,978,114	11,061,917	19%	118%	5,241	9%
Projected Future Experience	2017	10,999,375	3,482,847	1,984,164	10,707,745	32%	129%	5,170	10%
	2018	10,621,097	4,169,518	2,425,809	10,631,212	39%	139%	5,098	12%
	2019	12,568,828	4,526,715	3,210,463	-14,162,038	36%	-77%	4,728	13%
	2020	14,366,343	4,892,770	3,880,461	8,412,589	34%	93%	4,657	14%
	2021	13,833,833	5,737,931	4,455,677	8,184,455	41%	101%	4,584	16%
	2022	12,847,603	6,678,754	5,124,139	7,815,846	52%	113%	4,506	17%
	2023	12,468,171	7,747,848	5,922,802	7,648,595	62%	123%	4,424	19%
	2024	12,228,012	8,948,932	6,847,433	7,410,547	73%	134%	4,338	21%
	2025	11,933,696	10,319,556	7,903,565	7,077,817	86%	146%	4,247	23%
	2026	11,655,923	11,837,206	9,100,506	6,660,579	102%	159%	4,152	25%
	2027	11,362,191	13,607,025	10,467,101	6,141,563	120%	174%	4,050	27%
	2028	11,038,910	15,659,284	12,037,951	5,510,842	142%	192%	3,942	30%
	2029	10,712,824	17,949,005	13,829,451	4,779,261	168%	212%	3,828	33%
	2030	10,376,731	20,422,266	15,839,064	3,959,812	197%	235%	3,707	36%
	2031	10,028,753	23,080,407	18,060,534	3,058,161	230%	261%	3,579	39%
	2032	9,658,208	25,859,775	20,475,266	2,066,414	268%	289%	3,445	43%
	2033	9,279,946	28,714,711	23,056,524	1,013,886	309%	320%	3,304	47%
	2034	8,875,494	31,617,787	25,776,654	-104,936	356%	355%	3,157	51%
	2035	8,464,898	34,456,613	28,587,161	-1,278,842	407%	392%	3,005	55%
	2036	8,023,667	37,178,550	31,435,036	-2,467,655	463%	433%	2,848	59%
	2037	7,584,435	39,718,391	34,263,478	-3,641,938	524%	476%	2,687	64%
	2038	7,136,092	42,022,285	37,013,122	-4,760,222	589%	522%	2,523	68%
	2039	6,679,805	44,008,199	39,617,369	-5,821,002	659%	572%	2,357	73%
	2040	6,218,970	45,574,680	41,999,639	-6,779,124	733%	624%	2,191	77%
	2041	5,756,508	46,706,367	44,092,754	-7,624,330	811%	679%	2,025	81%
	2042	5,298,070	47,383,301	45,848,119	-8,314,299	894%	737%	1,862	86%
	2043	4,846,679	47,572,143	47,217,832	-8,866,104	982%	799%	1,702	90%
	2044	4,406,346	47,232,893	48,156,839	-9,286,885	1,072%	861%	1,547	94%
	2045	3,980,621	46,490,069	48,653,682	-9,568,118	1,168%	928%	1,397	97%
	2046	3,572,995	45,336,129	48,705,941	-9,682,363	1,269%	998%	1,255	101%
	2047	3,186,541	43,817,311	48,326,118	-9,652,066	1,375%	1,072%	1,120	104%
	2048	2,823,430	41,929,492	47,521,997	-9,486,361	1,485%	1,149%	994	107%
	2049	2,485,483	39,759,060	46,319,167	-9,198,244	1,600%	1,230%	876	110%
	2050	2,173,828	37,315,002	44,747,291	-8,816,262	1,717%	1,311%	768	112%
	2051	1,889,117	34,736,665	42,856,581	-8,364,605	1,839%	1,396%	669	114%
	2052-2056	6,083,939	134,056,303	178,857,770	-33,709,273	2,203%	1,649%	2,177	122%
	2057-2061	2,519,619	76,387,761	115,838,175	-19,827,467	3,032%	2,245%	934	126%
	2062-2066	921,915	37,384,081	64,250,236	-9,849,511	4,055%	2,987%	359	127%
	2067-2071	309,737	15,683,800	30,916,735	-4,195,521	5,064%	3,709%	127	128%
	2072-2076	98,412	5,579,009	12,978,473	-1,559,365	5,669%	4,084%	42	128%

**With Interest Accum./Disc. To 12/31/2016**

History	176,297,355	15,707,380	7,009,253	108,881,078	9%	71%
Future	180,895,349	440,479,048	423,774,693	-108,809,580	243%	183%
Lifetime	357,192,704	456,186,428	430,783,946	71,497	128%	128%

**Attachment 4**  
**Demonstration that the Requested Rate Increase Passes the Dual Loss Ratio Requirement**  
**Massachusetts Mutual Life Insurance Company Nationwide Experience**  
**All Rate Series Combined Issued Prior to October 1, 2003**

1	Accumulated value of initial earned premium	743,010,242	x	69%	=	514,559,886
2	Present value of future projected initial earned premium	250,577,655	x	69%	=	173,533,556
3a	Present value of future projected premium	425,489,220				
3b	Present value of future projected premium in excess of the projected initial earned premiums (3a - 2)	174,911,565	x	80%	=	139,929,252
<b>4</b>	<b>Lifetime Earned Premium Times Prescribed Factor: Sum of 1, 2, and 3b</b>					<b>828,022,694</b>
5a	Accumulated value of incurred claims without the inclusion of active life reserves					175,340,437
5b	Present value of future projected incurred claims without the inclusion of active life reserves					1,435,098,247
<b>6</b>	<b>Lifetime Incurred Claims with Rate Increase: Sum 5a and 5b</b>					<b>1,610,438,684</b>
7	Test: 6 is not less than 4					Pass
<p><i>Items 1, 3a, and 6 are consistent with the accumulated and present values shown in Exhibit I-b.</i></p> <p><i>All accumulated or present values use the maximum valuation interest rate for contract reserves applicable for the year of issue, which ranges from 3.5% to 4.5%.</i></p> <p><i>Item 2 reflects the impact of CBUL and RBO to align persistency with that in Item 3.</i></p>						

**Attachment 5**  
**Demonstration that the Requested Rate Increase Passes the Dual Loss Ratio Requirement**  
**Massachusetts Mutual Life Insurance Company Virginia-Specific Experience**  
**All Rate Series Combined Issued Prior to October 1, 2003**

1	Accumulated value of initial earned premium	47,788,291	x	71%	=	33,952,954
2	Present value of future projected initial earned premium	18,452,387	x	71%	=	13,110,179
3a	Present value of future projected premium	31,679,676				
3b	Present value of future projected premium in excess of the projected initial earned premiums (3a - 2)	13,227,289	x	80%	=	10,581,832
<b>4</b>	<b>Lifetime Earned Premium Times Prescribed Factor: Sum of 1, 2, and 3b</b>					<b>57,644,965</b>
5a	Accumulated value of incurred claims without the inclusion of active life reserves					6,966,375
5b	Present value of future projected incurred claims without the inclusion of active life reserves					108,407,972
<b>6</b>	<b>Lifetime Incurred Claims with Rate Increase: Sum 5a and 5b</b>					<b>115,374,348</b>
7	Test: 6 is not less than 4					Pass
<p><i>Items 1, 3a, and 6 are consistent with the accumulated and present values shown in Exhibit I-b.</i></p> <p><i>All accumulated or present values use the maximum valuation interest rate for contract reserves applicable for the year of issue, which ranges from 3.5% to 4.5%.</i></p> <p><i>Item 2 reflects the impact of CBUL and RBO to align persistency with that in Item 3.</i></p>						

**Attachment 6**  
**Demonstration that the Requested Rate Increase Passes the 58%/85% Loss Ratio Minimum**  
**Massachusetts Mutual Life Insurance Company Nationwide Experience**  
**All Rate Series Combined Issued On or After October 1, 2003**

1	Accumulated value of initial earned premium	1,863,139,210	x	58%	=	1,080,620,742
2	Present value of future projected initial earned premium	1,468,760,853	x	58%	=	851,881,295
3a	Present value of future projected premium	2,288,920,224				
3b	Present value of future projected premium in excess of the projected initial earned premiums (3a - 2)	820,159,371	x	85%	=	697,135,465
<b>4</b>	<b>Lifetime Earned Premium Times Prescribed Factor: Sum of 1, 2, and 3b</b>					<b>2,629,637,502</b>
5a	Accumulated value of incurred claims without the inclusion of active life reserves					124,708,301
5b	Present value of future projected incurred claims without the inclusion of active life reserves					5,294,723,952
<b>6</b>	<b>Lifetime Incurred Claims with Rate Increase: Sum 5a and 5b</b>					<b>5,419,432,252</b>
7	Test: 6 is not less than 4					Pass
<p><i>Items 1, 3a, and 6 are consistent with the accumulated and present values shown in Exhibit I-b.</i></p> <p><i>All accumulated or present values use the maximum valuation interest rate for contract reserves applicable for the year of issue, which ranges from 3.5% to 4.5%.</i></p> <p><i>Item 2 reflects the impact of CBUL and RBO to align persistency with that in Item 3.</i></p> <p><i>Item 5b is 15% higher than incurred claims shown in Exhibit I-b to reflect moderately adverse conditions.</i></p>						

**Attachment 7**  
**Demonstration that the Requested Rate Increase Passes the 58%/85% Loss Ratio Minimum**  
**Massachusetts Mutual Life Insurance Company Virginia-Specific Experience**  
**All Rate Series Combined Issued On or After October 1, 2003**

1	Accumulated value of initial earned premium	128,509,064	x	58%	=	74,535,257
2	Present value of future projected initial earned premium	92,963,120	x	58%	=	53,918,610
3a	Present value of future projected premium	149,215,673				
3b	Present value of future projected premium in excess of the projected initial earned premiums (3a - 2)	56,252,553	x	85%	=	47,814,670
<b>4</b>	<b>Lifetime Earned Premium Times Prescribed Factor: Sum of 1, 2, and 3b</b>					<b>176,268,537</b>
5a	Accumulated value of incurred claims without the inclusion of active life reserves					8,741,004
5b	Present value of future projected incurred claims without the inclusion of active life reserves					381,881,737
<b>6</b>	<b>Lifetime Incurred Claims with Rate Increase: Sum 5a and 5b</b>					<b>390,622,741</b>
7	Test: 6 is not less than 4					Pass
<p><i>Items 1, 3a, and 6 are consistent with the accumulated and present values shown in Exhibit I-b.</i></p> <p><i>All accumulated or present values use the maximum valuation interest rate for contract reserves applicable for the year of issue, which ranges from 3.5% to 4.5%.</i></p> <p><i>Item 2 reflects the impact of CBUL and RBO to align persistency with that in Item 3.</i></p> <p><i>Item 5b is 15% higher than incurred claims shown in Exhibit I-b to reflect moderately adverse conditions.</i></p>						

**Attachment 8A**  
**Massachusetts Mutual Life Insurance Company**  
**Actual and Projected Experience by Calendar Year**  
**Nationwide Experience - Before Requested Rate Increase**  
**Lifetime-Pay Policy Forms Issued Prior to October 1, 2003 with Non-Lifetime Benefit Periods and No Inflation**

	Calendar Year	Actual or Projected Experience using Current Assumptions						Cumulative LR with Interest
		A  Earned Premium <sup>[1]</sup>	B  Incurred Claims <sup>[2]</sup>	C  Paid Claims <sup>[2]</sup>	D  Claim Reserves <sup>[2]</sup>	E = B / A  Incurred Loss Ratio	F  End of Year Lives	G  Actual (Column E) with Max. Val. Interest
Historical Experience	2000	88,326	0	0	0	0%	251	0%
	2001	809,567	0	0	0	0%	791	0%
	2002	1,546,750	0	0	0	0%	1,168	0%
	2003	2,153,163	174,231	29,730	148,031	8%	1,356	4%
	2004	2,186,695	499,547	151,957	509,448	23%	1,311	10%
	2005	2,102,846	1,052,280	345,806	1,248,914	50%	1,262	18%
	2006	2,018,776	84,261	378,366	985,373	4%	1,240	16%
	2007	1,954,940	816,941	399,350	1,442,212	42%	1,208	19%
	2008	1,891,867	431,695	442,175	1,474,806	23%	1,182	20%
	2009	1,835,176	1,215,721	577,063	2,172,297	66%	1,089	24%
	2010	1,757,597	1,053,676	820,802	2,486,040	60%	1,061	27%
	2011	1,684,916	1,116,467	897,837	2,800,012	66%	1,037	30%
	2012	1,611,376	1,189,703	1,167,706	2,940,842	74%	1,009	32%
	2013	1,515,281	1,097,925	1,204,861	2,950,387	72%	977	34%
	2014	1,420,870	1,441,991	1,400,562	3,113,027	101%	947	37%
	2015	1,312,299	1,364,797	1,446,721	3,155,266	104%	897	40%
	2016	1,194,868	1,297,672	1,467,767	1,815,115	109%	864	42%
Projected Future Experience (60 Years)	2017	1,346,674	1,548,452	927,512	1,735,538	115%	828	44%
	2018	1,266,085	1,611,166	1,235,025	1,951,798	127%	790	46%
	2019	1,184,048	1,657,463	1,512,756	2,079,505	140%	752	49%
	2020	1,101,292	1,692,707	1,678,290	2,159,367	154%	712	51%
	2021	1,018,762	1,706,988	1,742,762	2,190,672	168%	672	53%
	2022	937,534	1,707,415	1,755,282	2,210,435	182%	631	55%
	2023	858,473	1,693,270	1,757,587	2,213,846	197%	591	57%
	2024	782,285	1,671,311	1,749,840	2,202,722	214%	550	59%
	2025	709,391	1,642,322	1,731,225	2,180,529	232%	511	61%
	2026	640,161	1,602,349	1,702,251	2,146,257	250%	472	62%
	2027	574,858	1,562,382	1,666,397	2,106,584	272%	434	64%
	2028	513,557	1,518,354	1,625,765	2,062,064	296%	397	65%
	2029	456,346	1,466,060	1,579,707	2,009,628	321%	361	67%
	2030	403,370	1,406,783	1,527,515	1,948,169	349%	326	68%
	2031	354,663	1,340,249	1,468,590	1,876,881	378%	293	69%
	2032	310,163	1,267,871	1,403,101	1,796,211	409%	262	70%
	2033	269,822	1,188,823	1,330,988	1,705,835	441%	233	71%
	2034	233,486	1,106,896	1,253,223	1,608,307	474%	206	72%
	2035	200,874	1,021,466	1,171,006	1,504,392	509%	180	73%
	2036	171,800	933,383	1,085,341	1,394,729	543%	157	74%
	2037	146,084	842,462	996,746	1,279,259	577%	136	74%
	2038	123,472	752,958	906,571	1,160,904	610%	117	75%
	2039	103,634	666,555	816,546	1,042,619	643%	100	75%
	2040	86,387	583,868	728,106	926,599	676%	84	76%
	2041	71,531	507,308	642,908	815,876	709%	71	76%
	2042	58,791	436,166	562,315	711,449	742%	59	76%
	2043	47,952	371,709	487,335	614,615	775%	49	76%
	2044	38,806	312,961	418,390	525,279	806%	40	76%
	2045	31,141	260,747	355,638	444,025	837%	33	77%
	2046	24,796	214,415	299,045	370,818	865%	26	77%
	2047	19,598	174,506	248,750	306,035	890%	21	77%
	2048	15,346	140,400	204,628	249,552	915%	17	77%
	2049	11,919	111,963	166,593	201,195	939%	13	77%
	2050	9,174	88,053	134,109	160,157	960%	10	77%
	2051	6,996	68,221	106,622	125,719	975%	8	77%
	2052-2056	15,846	158,949	263,958	299,228	1,003%	19	77%
	2057-2061	3,208	34,800	61,731	62,221	1,085%	5	77%
	2062-2066	577	7,921	12,861	10,815	1,373%	1	77%
	2067-2071	102	1,741	2,625	1,861	1,699%	0	77%
	2072-2076	14	250	399	253	1,829%	0	77%

[1] Actual earned premium increases from the history to projection because of differences in the treatment of waiver of premium. Historical data reduced earned premium for waiver, whereas projections treat waiver as an increase to claims with no impact on premium. The difference in the treatment of waiver has an immaterial impact on the lifetime loss ratio.

[2] Incurred Claims are discounted to the year of incurral, whereas Paid Claims and Claim Reserves are calendar year values that are not discounted to the date of incurral.

**Attachment 8B**  
**Massachusetts Mutual Life Insurance Company**  
**Actual and Projected Experience by Calendar Year**  
**Nationwide Experience - After Requested Rate Increase**  
**Lifetime-Pay Policy Forms Issued Prior to October 1, 2003 with Non-Lifetime Benefit Periods and No Inflation**

	Calendar Year	Actual or Projected Experience using Current Assumptions						Cumulative LR with Interest
		A Earned Premium <sup>[1]</sup>	B Incurred Claims <sup>[2]</sup>	C Paid Claims <sup>[2]</sup>	D Claim Reserves <sup>[2]</sup>	E = B / A Incurred Loss Ratio	F End of Year Lives	G Actual (Column E) with Max. Val. Interest
Historical Experience	2000	88,326	0	0	0	0%	251	0%
	2001	809,567	0	0	0	0%	791	0%
	2002	1,546,750	0	0	0	0%	1,168	0%
	2003	2,153,163	174,231	29,730	148,031	8%	1,356	4%
	2004	2,186,695	499,547	151,957	509,448	23%	1,311	10%
	2005	2,102,846	1,052,280	345,806	1,248,914	50%	1,262	18%
	2006	2,018,776	84,261	378,366	985,373	4%	1,240	16%
	2007	1,954,940	816,941	399,350	1,442,212	42%	1,208	19%
	2008	1,891,867	431,695	442,175	1,474,806	23%	1,182	20%
	2009	1,835,176	1,215,721	577,063	2,172,297	66%	1,089	24%
	2010	1,757,597	1,053,676	820,802	2,486,040	60%	1,061	27%
	2011	1,684,916	1,116,467	897,837	2,800,012	66%	1,037	30%
	2012	1,611,376	1,189,703	1,167,706	2,940,842	74%	1,009	32%
	2013	1,515,281	1,097,925	1,204,861	2,950,387	72%	977	34%
	2014	1,420,870	1,441,991	1,400,562	3,113,027	101%	947	37%
	2015	1,312,299	1,364,797	1,446,721	3,155,266	104%	897	40%
	2016	1,194,868	1,297,672	1,467,767	1,815,115	109%	864	42%
Projected Future Experience (60 Years)	2017	1,346,674	1,548,452	927,512	1,735,538	115%	828	44%
	2018	1,266,085	1,611,166	1,235,025	1,951,798	127%	790	46%
	2019	1,341,497	1,584,922	1,488,524	2,031,212	118%	719	48%
	2020	1,407,518	1,539,887	1,601,408	2,031,648	109%	681	50%
	2021	1,303,384	1,549,466	1,622,027	2,021,218	119%	642	52%
	2022	1,200,851	1,546,191	1,608,283	2,021,018	129%	603	53%
	2023	1,100,997	1,529,420	1,599,097	2,012,939	139%	564	55%
	2024	1,004,700	1,505,691	1,584,296	1,995,381	150%	525	56%
	2025	912,484	1,475,771	1,561,503	1,969,872	162%	487	57%
	2026	824,805	1,436,152	1,531,220	1,933,897	174%	450	59%
	2027	741,985	1,396,362	1,495,060	1,892,978	188%	414	60%
	2028	664,116	1,352,990	1,454,609	1,847,675	204%	378	61%
	2029	591,311	1,302,587	1,409,418	1,795,500	220%	344	62%
	2030	523,763	1,246,319	1,358,989	1,735,603	238%	311	63%
	2031	461,531	1,183,983	1,302,867	1,667,372	257%	279	64%
	2032	404,542	1,116,944	1,241,303	1,591,321	276%	249	65%
	2033	352,749	1,044,479	1,174,310	1,507,219	296%	221	66%
	2034	305,965	969,989	1,102,802	1,417,385	317%	195	66%
	2035	263,858	892,774	1,027,807	1,322,432	338%	171	67%
	2036	226,213	813,652	950,199	1,222,945	360%	149	67%
	2037	192,811	732,494	870,450	1,118,915	380%	129	68%
	2038	163,347	653,166	789,807	1,013,018	400%	111	68%
	2039	137,421	576,977	709,771	907,810	420%	94	69%
	2040	114,806	504,347	631,545	805,113	439%	80	69%
	2041	95,260	437,333	556,506	707,496	459%	67	69%
	2042	78,449	375,262	485,790	615,753	478%	56	69%
	2043	64,104	319,152	420,209	530,915	498%	46	70%
	2044	51,966	268,143	360,073	452,849	516%	38	70%
	2045	41,769	222,968	305,482	382,060	534%	31	70%
	2046	33,304	183,024	256,393	318,494	550%	25	70%
	2047	26,354	148,735	212,898	262,437	564%	20	70%
	2048	20,655	119,501	174,856	213,708	579%	16	70%
	2049	16,057	95,180	142,152	172,096	593%	12	70%
	2050	12,367	74,749	114,283	136,845	604%	10	70%
	2051	9,436	57,829	90,745	107,306	613%	8	70%
	2052-2056	21,406	134,156	223,891	254,749	627%	18	70%
	2057-2061	4,371	28,929	51,831	52,594	662%	5	70%
	2062-2066	806	6,442	10,599	8,982	799%	1	70%
	2067-2071	147	1,406	2,133	1,518	959%	0	70%
	2072-2076	20	203	324	205	1,037%	0	70%

[1] Actual earned premium increases from the history to projection because of differences in the treatment of waiver of premium. Historical data reduced earned premium for waiver, whereas projections treat waiver as an increase to claims with no impact on premium. The difference in the treatment of waiver has an immaterial impact on the lifetime loss ratio.

[2] Incurred Claims are discounted to the year of incurral, whereas Paid Claims and Claim Reserves are calendar year values that are not discounted to the date of incurral.

**Attachment 8C**  
**Massachusetts Mutual Life Insurance Company**  
**Actual and Projected Experience by Calendar Year**  
**Nationwide Experience - After Requested Rate Increase without RBO, CBUL, and Adverse Selection**  
**Lifetime-Pay Policy Forms Issued Prior to October 1, 2003 with Non-Lifetime Benefit Periods and No Inflation**

	Calendar Year	Actual or Projected Experience using Current Assumptions						Cumulative LR with Interest
		A Earned Premium <sup>[1]</sup>	B Incurred Claims <sup>[2]</sup>	C Paid Claims <sup>[2]</sup>	D Claim Reserves <sup>[2]</sup>	E = B / A Incurred Loss Ratio	F End of Year Lives	G Actual (Column E) with Max. Val. Interest
Historical Experience	2000	88,326	0	0	0	0%	251	0%
	2001	809,567	0	0	0	0%	791	0%
	2002	1,546,750	0	0	0	0%	1,168	0%
	2003	2,153,163	174,231	29,730	148,031	8%	1,356	4%
	2004	2,186,695	499,547	151,957	509,448	23%	1,311	10%
	2005	2,102,846	1,052,280	345,806	1,248,914	50%	1,262	18%
	2006	2,018,776	84,261	378,366	985,373	4%	1,240	16%
	2007	1,954,940	816,941	399,350	1,442,212	42%	1,208	19%
	2008	1,891,867	431,695	442,175	1,474,806	23%	1,182	20%
	2009	1,835,176	1,215,721	577,063	2,172,297	66%	1,089	24%
	2010	1,757,597	1,053,676	820,802	2,486,040	60%	1,061	27%
	2011	1,684,916	1,116,467	897,837	2,800,012	66%	1,037	30%
	2012	1,611,376	1,189,703	1,167,706	2,940,842	74%	1,009	32%
	2013	1,515,281	1,097,925	1,204,861	2,950,387	72%	977	34%
	2014	1,420,870	1,441,991	1,400,562	3,113,027	101%	947	37%
	2015	1,312,299	1,364,797	1,446,721	3,155,266	104%	897	40%
	2016	1,194,868	1,297,672	1,467,767	1,815,115	109%	864	42%
Projected Future Experience (60 Years)	2017	1,346,674	1,548,452	927,512	1,735,538	115%	828	44%
	2018	1,266,085	1,611,166	1,235,025	1,951,798	127%	790	46%
	2019	1,459,983	1,675,793	1,518,756	2,091,838	115%	752	48%
	2020	1,634,915	1,728,009	1,696,240	2,189,879	106%	712	50%
	2021	1,515,614	1,741,147	1,769,838	2,229,389	115%	672	52%
	2022	1,398,082	1,740,166	1,786,773	2,251,651	124%	631	54%
	2023	1,283,543	1,724,385	1,789,856	2,255,162	134%	591	55%
	2024	1,172,990	1,700,717	1,781,752	2,242,760	145%	550	57%
	2025	1,067,019	1,669,965	1,762,031	2,218,578	157%	511	58%
	2026	966,140	1,628,176	1,731,353	2,182,140	169%	472	60%
	2027	870,715	1,586,501	1,693,686	2,140,339	182%	434	61%
	2028	780,843	1,540,825	1,651,275	2,093,755	197%	397	62%
	2029	696,657	1,486,894	1,603,481	2,039,290	213%	361	63%
	2030	618,390	1,426,015	1,549,595	1,975,832	231%	326	64%
	2031	546,126	1,357,905	1,489,012	1,902,564	249%	293	65%
	2032	479,791	1,283,995	1,421,903	1,819,941	268%	262	66%
	2033	419,344	1,203,450	1,348,210	1,727,635	287%	233	67%
	2034	364,587	1,120,112	1,268,915	1,628,239	307%	206	68%
	2035	315,161	1,033,337	1,185,230	1,522,523	328%	180	69%
	2036	270,841	943,969	1,098,163	1,411,121	349%	157	69%
	2037	231,393	851,801	1,008,226	1,293,956	368%	136	70%
	2038	196,481	761,114	916,768	1,173,957	387%	117	70%
	2039	165,673	673,609	825,525	1,054,096	407%	100	71%
	2040	138,713	589,916	735,942	936,592	425%	84	71%
	2041	115,334	512,453	649,685	824,500	444%	71	71%
	2042	95,167	440,498	568,123	718,822	463%	59	71%
	2043	77,907	375,325	492,269	620,861	482%	49	72%
	2044	63,267	315,945	422,543	530,517	499%	40	72%
	2045	50,938	263,184	359,100	448,371	517%	33	72%
	2046	40,677	216,381	301,903	374,383	532%	26	72%
	2047	32,232	176,077	251,084	308,926	546%	21	72%
	2048	25,296	141,641	206,514	251,869	560%	17	72%
	2049	19,688	112,937	168,103	203,032	574%	13	72%
	2050	15,180	88,807	135,305	161,598	585%	10	72%
	2051	11,595	68,797	107,558	126,834	593%	8	72%
	2052-2056	26,385	160,240	266,195	301,797	607%	19	72%
	2057-2061	5,447	35,053	62,210	62,712	644%	5	72%
	2062-2066	1,026	7,970	12,948	10,889	777%	1	72%
	2067-2071	189	1,751	2,641	1,872	925%	0	72%
	2072-2076	25	252	402	254	999%	0	72%

[1] Actual earned premium increases from the history to projection because of differences in the treatment of waiver of premium. Historical data reduced earned premium for waiver, whereas projections treat waiver as an increase to claims with no impact on premium. The difference in the treatment of waiver has an immaterial impact on the lifetime loss ratio.

[2] Incurred Claims are discounted to the year of incurral, whereas Paid Claims and Claim Reserves are calendar year values that are not discounted to the date of incurral.



**Attachment 8D**  
**Massachusetts Mutual Life Insurance Company**  
**Actual and Projected Experience by Calendar Year**  
**Nationwide Experience Restated to Proposed Increase From Inception**  
**Lifetime-Pay Policy Forms Issued Prior to October 1, 2003 with Non-Lifetime Benefit Periods and No Inflation**

	Calendar Year	Actual or Projected Experience using Current Assumptions						Cumulative LR with Interest
		A  Earned Premium <sup>[1]</sup>	B  Incurred Claims <sup>[2]</sup>	C  Paid Claims <sup>[2]</sup>	D  Claim Reserves <sup>[2]</sup>	E = B / A  Incurred Loss Ratio	F  End of Year Lives	G  Actual (Column E) with Max. Val. Interest
Historical Experience	2000	133,844	0	0	0	0%	251	0%
	2001	1,233,071	0	0	0	0%	791	0%
	2002	2,309,323	0	0	0	0%	1,168	0%
	2003	3,195,475	174,231	29,730	148,031	5%	1,356	2%
	2004	3,247,664	499,547	151,957	509,448	15%	1,311	6%
	2005	3,123,693	1,052,280	345,806	1,248,914	34%	1,262	12%
	2006	3,001,342	84,261	378,366	985,373	3%	1,240	11%
	2007	2,908,479	816,941	399,350	1,442,212	28%	1,208	13%
	2008	2,816,649	431,695	442,175	1,474,806	15%	1,182	13%
	2009	2,734,271	1,215,721	577,063	2,172,297	44%	1,089	16%
	2010	2,619,952	1,053,676	820,802	2,486,040	40%	1,061	18%
	2011	2,510,490	1,116,467	897,837	2,800,012	44%	1,037	20%
	2012	2,398,291	1,189,703	1,167,706	2,940,842	50%	1,009	22%
	2013	2,253,149	1,097,925	1,204,861	2,950,387	49%	977	23%
	2014	2,107,940	1,441,991	1,400,562	3,113,027	68%	947	25%
	2015	1,953,644	1,364,797	1,446,721	3,155,266	70%	897	27%
	2016	1,779,493	1,297,672	1,467,767	1,815,115	73%	864	28%
Projected Future Experience (60 Years)	2017	1,989,322	1,584,922	934,424	1,760,073	80%	828	30%
	2018	1,872,939	1,647,641	1,255,542	1,989,728	88%	790	31%
	2019	1,754,467	1,693,477	1,543,472	2,122,399	97%	752	33%
	2020	1,634,915	1,728,009	1,713,064	2,204,146	106%	712	34%
	2021	1,515,614	1,741,147	1,778,136	2,235,606	115%	672	36%
	2022	1,398,082	1,740,166	1,790,557	2,254,193	124%	631	37%
	2023	1,283,543	1,724,385	1,791,702	2,255,902	134%	591	39%
	2024	1,172,990	1,700,717	1,782,419	2,242,845	145%	550	40%
	2025	1,067,019	1,669,965	1,762,118	2,218,578	157%	511	41%
	2026	966,140	1,628,176	1,731,353	2,182,140	169%	472	42%
	2027	870,715	1,586,501	1,693,686	2,140,339	182%	434	43%
	2028	780,843	1,540,825	1,651,275	2,093,755	197%	397	44%
	2029	696,657	1,486,894	1,603,481	2,039,290	213%	361	45%
	2030	618,390	1,426,015	1,549,595	1,975,832	231%	326	46%
	2031	546,126	1,357,905	1,489,012	1,902,564	249%	293	47%
	2032	479,791	1,283,995	1,421,903	1,819,941	268%	262	48%
	2033	419,344	1,203,450	1,348,210	1,727,635	287%	233	48%
	2034	364,587	1,120,112	1,268,915	1,628,239	307%	206	49%
	2035	315,161	1,033,337	1,185,230	1,522,523	328%	180	49%
	2036	270,841	943,969	1,098,163	1,411,121	349%	157	50%
	2037	231,393	851,801	1,008,226	1,293,956	368%	136	50%
	2038	196,481	761,114	916,768	1,173,957	387%	117	51%
	2039	165,673	673,609	825,525	1,054,096	407%	100	51%
	2040	138,713	589,916	735,942	936,592	425%	84	51%
	2041	115,334	512,453	649,685	824,500	444%	71	51%
	2042	95,167	440,498	568,123	718,822	463%	59	52%
	2043	77,907	375,325	492,269	620,861	482%	49	52%
	2044	63,267	315,945	422,543	530,517	499%	40	52%
	2045	50,938	263,184	359,100	448,371	517%	33	52%
	2046	40,677	216,381	301,903	374,383	532%	26	52%
	2047	32,232	176,077	251,084	308,926	546%	21	52%
	2048	25,296	141,641	206,514	251,869	560%	17	52%
	2049	19,688	112,937	168,103	203,032	574%	13	52%
	2050	15,180	88,807	135,305	161,598	585%	10	52%
	2051	11,595	68,797	107,558	126,834	593%	8	52%
	2052-2056	26,385	160,240	266,195	301,797	607%	19	52%
	2057-2061	5,447	35,053	62,210	62,712	644%	5	52%
	2062-2066	1,026	7,970	12,948	10,889	777%	1	52%
	2067-2071	189	1,751	2,641	1,872	925%	0	52%
	2072-2076	25	252	402	254	999%	0	52%

[1] Actual earned premium increases from the history to projection because of differences in the treatment of waiver of premium. Historical data reduced earned premium for waiver, whereas projections treat waiver as an increase to claims with no impact on premium. The difference in the treatment of waiver has an immaterial impact on the lifetime loss ratio.

[2] Incurred Claims are discounted to the year of incurral, whereas Paid Claims and Claim Reserves are calendar year values that are not discounted to the date of incurral.

**Attachment 8E**  
**Massachusetts Mutual Life Insurance Company**  
**Projected Experience by Calendar Year**  
**Nationwide Expected Experience**

**Lifetime-Pay Policy Forms Issued Prior to October 1, 2003 with Non-Lifetime Benefit Periods and No Inflation**

	Calendar Year	Projected Experience using Original Pricing Assumptions						Cumulative LR with Interest
		A Earned Premium	B Incurred Claims <sup>[1]</sup>	C Paid Claims <sup>[1]</sup>	D Claim Reserves <sup>[1]</sup>	E = B / A Incurred Loss Ratio	F End of Year Lives	G Actual (Column E) with Max. Val. Interest
Projected Experience	2000	87,982	2,664	384	2,250	3%	253	3%
	2001	805,737	25,023	4,397	22,287	3%	788	3%
	2002	1,516,478	66,936	18,490	68,223	4%	1,148	4%
	2003	2,101,513	145,393	49,689	157,892	7%	1,301	5%
	2004	2,083,562	251,438	105,849	292,611	12%	1,216	7%
	2005	1,938,921	384,002	189,800	471,486	20%	1,147	10%
	2006	1,815,390	528,627	301,274	681,355	29%	1,088	13%
	2007	1,703,439	641,475	429,319	878,510	38%	1,033	16%
	2008	1,598,363	720,681	555,076	1,038,519	45%	981	19%
	2009	1,497,883	765,661	663,982	1,150,230	51%	929	22%
	2010	1,401,425	800,403	749,788	1,229,982	57%	878	24%
	2011	1,307,956	832,428	816,087	1,293,131	64%	828	26%
	2012	1,216,196	858,633	864,680	1,344,576	71%	777	29%
	2013	1,125,496	878,592	901,591	1,385,578	78%	727	31%
	2014	1,035,835	891,631	930,047	1,416,035	86%	677	33%
	2015	947,022	898,218	952,501	1,436,382	95%	627	34%
	2016	856,520	898,415	972,553	1,446,649	105%	574	36%
	2017	762,456	873,904	973,104	1,431,403	115%	520	38%
	2018	667,773	835,327	960,895	1,391,266	125%	466	39%
	2019	577,749	785,831	934,601	1,330,056	136%	416	41%
	2020	496,778	732,522	895,579	1,256,235	147%	370	42%
	2021	425,210	678,400	847,847	1,175,969	160%	328	43%
	2022	362,279	624,520	794,516	1,093,064	172%	290	44%
	2023	307,220	571,716	738,340	1,009,824	186%	255	45%
	2024	259,300	520,236	681,504	927,439	201%	224	46%
	2025	217,811	470,574	624,917	846,832	216%	196	46%
	2026	182,102	423,314	569,620	768,908	232%	171	47%
	2027	151,547	378,477	516,027	694,134	250%	149	48%
	2028	125,557	336,272	464,660	622,886	268%	129	48%
	2029	103,579	297,189	415,962	555,750	287%	112	48%
	2030	85,094	261,015	370,249	492,890	307%	97	49%
	2031	69,625	227,955	327,635	434,548	327%	84	49%
	2032	56,743	197,872	288,219	380,760	349%	72	49%
	2033	46,072	170,831	252,062	331,640	371%	62	49%
	2034	37,278	146,564	219,171	287,053	393%	54	49%
	2035	30,065	125,048	189,456	246,928	416%	46	50%
	2036	24,177	106,155	162,875	211,151	439%	40	50%
	2037	19,389	89,733	139,293	179,570	463%	35	50%
	2038	15,514	75,468	118,520	151,865	486%	30	50%
	2039	12,393	63,218	100,340	127,766	510%	26	50%
	2040	9,888	52,752	84,554	106,951	533%	23	50%
	2041	7,888	43,915	70,965	89,138	557%	20	50%
	2042	6,295	36,484	59,368	74,000	580%	17	50%
	2043	5,031	30,266	49,479	61,217	602%	15	50%
	2044	4,032	25,070	41,139	50,475	622%	13	50%
	2045	3,243	20,779	34,152	41,519	641%	12	50%
	2046	2,620	17,248	28,327	34,105	658%	10	50%
	2047	2,130	14,355	23,497	28,010	674%	9	50%
	2048	1,742	11,999	19,509	23,035	689%	8	50%
	2049	1,436	10,076	16,223	18,991	702%	7	50%
	2050	1,191	8,532	13,534	15,732	716%	6	50%
	2051	996	7,294	11,356	13,126	732%	5	50%
	2052-2056	3,120	24,449	36,008	41,356	784%	19	50%
	2057-2061	1,447	13,832	18,798	21,700	956%	10	50%
	2062-2066	645	7,878	10,970	12,356	1,221%	5	50%
	2067-2071	243	3,831	5,818	6,180	1,579%	2	50%
	2072-2076	69	1,355	2,444	2,306	1,972%	1	50%

[1] Incurred Claims are discounted to the year of incurral, whereas Paid Claims and Claim Reserves are calendar year values that are not discounted to the date of incurral.

**Attachment 8F**  
**Massachusetts Mutual Life Insurance Company**  
**Actual and Projected Experience by Calendar Year**  
**Nationwide Experience - Before Requested Rate Increase**  
**Lifetime-Pay Policy Forms Issued Prior to October 1, 2003 with Non-Lifetime Benefit Periods and No Inflation**

	Calendar Year	Actual or Projected Experience using Original Pricing Assumptions						Cumulative LR with Interest
		A  Earned Premium <sup>[1]</sup>	B  Incurred Claims <sup>[2]</sup>	C  Paid Claims <sup>[2][3]</sup>	D  Claim Reserves <sup>[2][3]</sup>	E = B / A  Incurred Loss Ratio	F  End of Year Lives	G  Actual (Column E) with Max. Val. Interest
Historical Experience	2000	88,326	0	0	0	0%	251	0%
	2001	809,567	0	0	0	0%	791	0%
	2002	1,546,750	0	0	0	0%	1,168	0%
	2003	2,153,163	174,231	29,730	148,031	8%	1,356	4%
	2004	2,186,695	499,547	151,957	509,448	23%	1,311	10%
	2005	2,102,846	1,052,280	345,806	1,248,914	50%	1,262	18%
	2006	2,018,776	84,261	378,366	985,373	4%	1,240	16%
	2007	1,954,940	816,941	399,350	1,442,212	42%	1,208	19%
	2008	1,891,867	431,695	442,175	1,474,806	23%	1,182	20%
	2009	1,835,176	1,215,721	577,063	2,172,297	66%	1,089	24%
	2010	1,757,597	1,053,676	820,802	2,486,040	60%	1,061	27%
	2011	1,684,916	1,116,467	897,837	2,800,012	66%	1,037	30%
	2012	1,611,376	1,189,703	1,167,706	2,940,842	74%	1,009	32%
	2013	1,515,281	1,097,925	1,204,861	2,950,387	72%	977	34%
	2014	1,420,870	1,441,991	1,400,562	3,113,027	101%	947	37%
	2015	1,312,299	1,364,797	1,446,721	3,155,266	104%	897	40%
	2016	1,194,868	1,297,672	1,467,767	1,815,115	109%	864	42%
Projected Future Experience (60 Years)	2017	1,206,221	1,516,712	0	0	126%	777	44%
	2018	1,051,802	1,451,223	0	0	138%	692	46%
	2019	905,565	1,365,795	0	0	151%	612	48%
	2020	774,705	1,274,073	0	0	164%	539	50%
	2021	659,502	1,180,053	0	0	179%	472	52%
	2022	558,698	1,085,510	0	0	194%	412	53%
	2023	470,929	992,275	0	0	211%	357	54%
	2024	394,897	900,777	0	0	228%	309	55%
	2025	329,402	812,227	0	0	247%	265	56%
	2026	273,350	727,805	0	0	266%	227	57%
	2027	225,650	647,486	0	0	287%	193	58%
	2028	185,302	572,435	0	0	309%	163	58%
	2029	151,396	503,170	0	0	332%	137	59%
	2030	123,074	439,433	0	0	357%	114	59%
	2031	99,534	381,483	0	0	383%	95	60%
	2032	80,069	328,760	0	0	411%	79	60%
	2033	64,063	281,329	0	0	439%	65	60%
	2034	50,978	238,763	0	0	468%	53	61%
	2035	40,340	201,061	0	0	498%	43	61%
	2036	31,739	168,068	0	0	530%	35	61%
	2037	24,825	139,452	0	0	562%	28	61%
	2038	19,298	114,777	0	0	595%	22	61%
	2039	14,908	93,745	0	0	629%	17	61%
	2040	11,443	75,915	0	0	663%	14	61%
	2041	8,724	61,001	0	0	699%	11	61%
	2042	6,606	48,588	0	0	736%	8	61%
	2043	4,966	38,339	0	0	772%	6	61%
	2044	3,707	29,958	0	0	808%	5	61%
	2045	2,748	23,210	0	0	845%	4	61%
	2046	2,022	17,836	0	0	882%	3	61%
	2047	1,478	13,597	0	0	920%	2	61%
	2048	1,074	10,279	0	0	958%	2	61%
	2049	775	7,694	0	0	993%	1	61%
	2050	556	5,724	0	0	1,029%	1	61%
	2051	398	4,239	0	0	1,066%	1	61%
	2052-2056	800	9,224	0	0	1,154%	2	61%
	2057-2061	147	2,211	0	0	1,506%	0	61%
	2062-2066	29	603	0	0	2,115%	0	61%
	2067-2071	5	118	0	0	2,508%	0	61%
	2072-2076	0	9	0	0	2,366%	0	61%

[1] Actual earned premium increases from the history to projection because of differences in the treatment of waiver of premium. Historical data reduced earned premium for waiver, whereas projections treat waiver as an increase to claims with no impact on premium. The difference in the treatment of waiver has an immaterial impact on the lifetime loss ratio.

[2] Incurred Claims are discounted to the year of incurral, whereas Paid Claims and Claim Reserves are calendar year values that are not discounted to the date of incurral.

[3] Projected values for paid claims and claim reserves are not readily available in the model used to project original pricing assumptions based on actual historical experience.

**Attachment 9A**  
**Massachusetts Mutual Life Insurance Company**  
**Actual and Projected Experience by Calendar Year**  
**Nationwide Experience - Before Requested Rate Increase**  
**Lifetime-Pay Policy Forms Issued Prior to October 1, 2003 with Non-Lifetime Benefit Periods and Auto Inflation**

	Calendar Year	Actual or Projected Experience using Current Assumptions						Cumulative LR with Interest
		A  Earned Premium <sup>[1]</sup>	B  Incurred Claims <sup>[2]</sup>	C  Paid Claims <sup>[2]</sup>	D  Claim Reserves <sup>[2]</sup>	E = B / A  Incurred Loss Ratio	F  End of Year Lives	G  Actual (Column E) with Max. Val. Interest
Historical Experience	2000	111,035	0	0	0	0%	358	0%
	2001	1,495,068	0	0	0	0%	1,608	0%
	2002	3,601,379	4,873	0	4,958	0%	3,149	0%
	2003	5,918,801	98,277	9,149	96,033	2%	4,279	1%
	2004	6,341,651	44,298	45,063	98,471	1%	4,174	1%
	2005	6,176,391	181,911	87,877	198,869	3%	4,107	1%
	2006	6,069,245	566,796	128,409	653,870	9%	4,055	3%
	2007	5,972,811	232,279	229,913	675,530	4%	4,006	3%
	2008	5,851,472	912,048	266,234	1,353,438	16%	3,936	5%
	2009	5,748,609	1,045,701	352,017	2,096,819	18%	3,893	6%
	2010	5,646,223	1,485,771	640,922	3,017,121	26%	3,848	8%
	2011	5,530,468	1,752,036	840,713	4,030,612	32%	3,793	10%
	2012	5,430,045	1,136,394	1,171,012	4,113,986	21%	3,743	10%
	2013	5,333,780	2,668,146	1,335,922	5,594,692	50%	3,696	13%
	2014	5,208,400	1,378,871	1,878,986	5,272,032	26%	3,627	13%
	2015	5,088,376	2,771,917	2,081,740	6,170,809	54%	3,580	15%
	2016	4,987,818	2,744,892	2,664,681	4,207,252	55%	3,530	17%
Projected Future Experience (60 Years)	2017	5,224,200	3,939,808	2,074,394	4,516,782	75%	3,457	19%
	2018	5,107,957	4,620,123	3,050,196	5,706,960	90%	3,379	22%
	2019	4,983,185	5,374,099	4,273,124	6,775,284	108%	3,296	25%
	2020	4,849,580	6,200,941	5,344,758	7,856,598	128%	3,207	28%
	2021	4,707,116	7,063,743	6,217,973	8,961,228	150%	3,114	31%
	2022	4,555,949	7,978,080	7,034,230	10,198,968	175%	3,015	35%
	2023	4,396,406	8,945,957	7,938,504	11,538,576	203%	2,910	38%
	2024	4,228,923	9,973,822	8,917,852	12,967,775	236%	2,801	42%
	2025	4,053,762	11,056,461	9,953,762	14,487,282	273%	2,687	46%
	2026	3,871,295	12,160,975	11,035,887	16,074,704	314%	2,567	51%
	2027	3,682,169	13,330,180	12,168,954	17,746,090	362%	2,443	55%
	2028	3,486,475	14,583,261	13,363,783	19,526,466	418%	2,314	60%
	2029	3,284,442	15,813,794	14,597,604	21,355,792	481%	2,180	65%
	2030	3,077,324	16,939,947	15,818,394	23,141,757	550%	2,043	70%
	2031	2,866,600	17,944,716	16,977,972	24,821,331	626%	1,903	75%
	2032	2,653,862	18,796,288	18,038,206	26,336,157	708%	1,762	80%
	2033	2,441,028	19,473,052	18,967,270	27,636,706	798%	1,620	85%
	2034	2,230,019	19,978,848	19,739,854	28,701,805	896%	1,480	90%
	2035	2,022,685	20,251,250	20,323,179	29,479,187	1,001%	1,342	94%
	2036	1,821,013	20,286,819	20,695,595	29,933,826	1,114%	1,208	99%
	2037	1,626,806	20,048,905	20,831,176	30,018,731	1,232%	1,079	103%
	2038	1,441,631	19,565,763	20,716,995	29,727,765	1,357%	956	107%
	2039	1,266,945	18,841,292	20,348,258	29,063,448	1,487%	840	111%
	2040	1,103,895	17,919,120	19,736,602	28,061,090	1,623%	733	114%
	2041	953,495	16,857,768	18,917,356	26,780,822	1,768%	633	117%
	2042	816,241	15,673,839	17,925,006	25,266,222	1,920%	542	120%
	2043	692,488	14,370,367	16,784,643	23,539,620	2,075%	461	122%
	2044	582,172	13,032,335	15,532,867	21,673,593	2,239%	388	125%
	2045	484,969	11,701,074	14,213,424	19,740,277	2,413%	324	126%
	2046	400,282	10,390,983	12,866,068	17,787,955	2,596%	268	128%
	2047	327,346	9,120,003	11,523,131	15,851,667	2,786%	220	129%
	2048	265,257	7,898,294	10,204,995	13,957,016	2,978%	179	130%
	2049	213,032	6,770,047	8,938,455	12,148,212	3,178%	144	131%
	2050	169,549	5,753,075	7,747,671	10,464,194	3,393%	115	132%
	2051	133,752	4,848,133	6,649,670	8,928,318	3,625%	92	132%
	2052-2056	328,796	14,184,771	20,384,947	27,015,905	4,314%	231	134%
	2057-2061	78,113	4,715,171	7,385,472	9,643,821	6,036%	58	134%
	2062-2066	15,283	1,301,914	2,220,047	2,935,265	8,519%	12	134%
	2067-2071	2,467	287,854	560,768	752,424	11,669%	2	134%
	2072-2076	304	47,513	115,754	151,767	15,639%	0	134%

[1] Actual earned premium increases from the history to projection because of differences in the treatment of waiver of premium. Historical data reduced earned premium for waiver, whereas projections treat waiver as an increase to claims with no impact on premium. The difference in the treatment of waiver has an immaterial impact on the lifetime loss ratio.

[2] Incurred Claims are discounted to the year of incurral, whereas Paid Claims and Claim Reserves are calendar year values that are not discounted to the date of incurral.

**Attachment 9B**  
**Massachusetts Mutual Life Insurance Company**  
**Actual and Projected Experience by Calendar Year**  
**Nationwide Experience - After Requested Rate Increase**  
**Lifetime-Pay Policy Forms Issued Prior to October 1, 2003 with Non-Lifetime Benefit Periods and Auto Inflation**

	Calendar Year	Actual or Projected Experience using Current Assumptions						Cumulative LR with Interest
		A Earned Premium <sup>[1]</sup>	B Incurred Claims <sup>[2]</sup>	C Paid Claims <sup>[2]</sup>	D Claim Reserves <sup>[2]</sup>	E = B / A Incurred Loss Ratio	F End of Year Lives	G Actual (Column E) with Max. Val. Interest
Historical Experience	2000	111,035	0	0	0	0%	358	0%
	2001	1,495,068	0	0	0	0%	1,608	0%
	2002	3,601,379	4,873	0	4,958	0%	3,149	0%
	2003	5,918,801	98,277	9,149	96,033	2%	4,279	1%
	2004	6,341,651	44,298	45,063	98,471	1%	4,174	1%
	2005	6,176,391	181,911	87,877	198,869	3%	4,107	1%
	2006	6,069,245	566,796	128,409	653,870	9%	4,055	3%
	2007	5,972,811	232,279	229,913	675,530	4%	4,006	3%
	2008	5,851,472	912,048	266,234	1,353,438	16%	3,936	5%
	2009	5,748,609	1,045,701	352,017	2,096,819	18%	3,893	6%
	2010	5,646,223	1,485,771	640,922	3,017,121	26%	3,848	8%
	2011	5,530,468	1,752,036	840,713	4,030,612	32%	3,793	10%
	2012	5,430,045	1,136,394	1,171,012	4,113,986	21%	3,743	10%
	2013	5,333,780	2,668,146	1,335,922	5,594,692	50%	3,696	13%
	2014	5,208,400	1,378,871	1,878,986	5,272,032	26%	3,627	13%
	2015	5,088,376	2,771,917	2,081,740	6,170,809	54%	3,580	15%
	2016	4,987,818	2,744,892	2,664,681	4,207,252	55%	3,530	17%
Projected Future Experience (60 Years)	2017	5,224,200	3,939,808	2,074,394	4,516,782	75%	3,457	19%
	2018	5,107,957	4,620,123	3,050,196	5,706,960	90%	3,379	22%
	2019	5,981,330	4,928,227	4,134,666	6,467,422	82%	3,069	24%
	2020	6,840,407	5,194,513	4,880,068	6,984,196	76%	2,986	27%
	2021	6,644,418	5,897,417	5,431,687	7,673,416	89%	2,898	29%
	2022	6,436,385	6,637,977	5,977,665	8,582,023	103%	2,805	31%
	2023	6,216,688	7,416,293	6,658,650	9,617,229	119%	2,708	34%
	2024	5,985,844	8,237,838	7,416,984	10,747,859	138%	2,605	37%
	2025	5,744,142	9,097,867	8,229,730	11,960,310	158%	2,498	40%
	2026	5,492,002	9,970,363	9,088,439	13,222,721	182%	2,386	43%
	2027	5,230,226	10,889,279	9,985,381	14,544,951	208%	2,270	46%
	2028	4,958,823	11,869,071	10,926,006	15,946,285	239%	2,149	49%
	2029	4,677,979	12,822,882	11,891,221	17,377,077	274%	2,024	52%
	2030	4,389,356	13,686,343	12,839,098	18,763,256	312%	1,896	56%
	2031	4,094,943	14,446,495	13,731,258	20,054,666	353%	1,765	59%
	2032	3,796,896	15,079,859	14,538,104	21,205,987	397%	1,634	63%
	2033	3,497,861	15,569,694	15,234,953	22,178,768	445%	1,502	66%
	2034	3,200,524	15,921,877	15,803,202	22,958,470	497%	1,372	70%
	2035	2,907,514	16,089,374	16,218,664	23,506,641	553%	1,243	73%
	2036	2,621,680	16,072,100	16,466,444	23,798,968	613%	1,119	76%
	2037	2,345,635	15,842,440	16,528,013	23,801,153	675%	999	79%
	2038	2,081,694	15,422,904	16,394,612	23,509,963	741%	885	82%
	2039	1,832,027	14,818,713	16,063,945	22,929,714	809%	777	85%
	2040	1,598,407	14,064,574	15,546,308	22,089,812	880%	677	87%
	2041	1,382,386	13,206,952	14,870,324	21,038,821	955%	585	89%
	2042	1,184,798	12,258,734	14,063,598	19,811,653	1,035%	501	91%
	2043	1,006,262	11,222,218	13,146,118	18,426,175	1,115%	425	93%
	2044	846,805	10,163,447	12,146,597	16,939,040	1,200%	358	94%
	2045	706,064	9,113,919	11,098,904	15,406,061	1,291%	299	95%
	2046	583,254	8,084,539	10,033,716	13,864,433	1,386%	247	96%
	2047	477,336	7,088,717	8,975,796	12,340,881	1,485%	203	97%
	2048	387,059	6,133,691	7,940,587	10,854,510	1,585%	165	98%
	2049	311,040	5,253,237	6,948,383	9,438,825	1,689%	133	99%
	2050	247,690	4,460,821	6,017,441	8,123,357	1,801%	106	99%
	2051	195,492	3,756,715	5,160,538	6,925,647	1,922%	84	99%
	2052-2056	481,058	10,975,745	15,792,500	20,920,605	2,282%	213	101%
	2057-2061	114,469	3,640,986	5,707,645	7,450,166	3,181%	54	101%
	2062-2066	22,427	1,003,799	1,712,769	2,263,803	4,476%	11	101%
	2067-2071	3,625	221,706	432,093	579,635	6,115%	2	101%
	2072-2076	447	36,574	89,125	116,838	8,181%	0	101%

[1] Actual earned premium increases from the history to projection because of differences in the treatment of waiver of premium. Historical data reduced earned premium for waiver, whereas projections treat waiver as an increase to claims with no impact on premium. The difference in the treatment of waiver has an immaterial impact on the lifetime loss ratio.

[2] Incurred Claims are discounted to the year of incurral, whereas Paid Claims and Claim Reserves are calendar year values that are not discounted to the date of incurral.

**Attachment 9C**  
**Massachusetts Mutual Life Insurance Company**  
**Actual and Projected Experience by Calendar Year**  
**Nationwide Experience - After Requested Rate Increase without RBO, CBUL, and Adverse Selection**  
**Lifetime-Pay Policy Forms Issued Prior to October 1, 2003 with Non-Lifetime Benefit Periods and Auto Inflation**

	Calendar Year	Actual or Projected Experience using Current Assumptions						Cumulative LR with Interest
		A Earned Premium <sup>[1]</sup>	B Incurred Claims <sup>[2]</sup>	C Paid Claims <sup>[2]</sup>	D Claim Reserves <sup>[2]</sup>	E = B / A Incurred Loss Ratio	F End of Year Lives	G Actual (Column E) with Max. Val. Interest
Historical Experience	2000	111,035	0	0	0	0%	358	0%
	2001	1,495,068	0	0	0	0%	1,608	0%
	2002	3,601,379	4,873	0	4,958	0%	3,149	0%
	2003	5,918,801	98,277	9,149	96,033	2%	4,279	1%
	2004	6,341,651	44,298	45,063	98,471	1%	4,174	1%
	2005	6,176,391	181,911	87,877	198,869	3%	4,107	1%
	2006	6,069,245	566,796	128,409	653,870	9%	4,055	3%
	2007	5,972,811	232,279	229,913	675,530	4%	4,006	3%
	2008	5,851,472	912,048	266,234	1,353,438	16%	3,936	5%
	2009	5,748,609	1,045,701	352,017	2,096,819	18%	3,893	6%
	2010	5,646,223	1,485,771	640,922	3,017,121	26%	3,848	8%
	2011	5,530,468	1,752,036	840,713	4,030,612	32%	3,793	10%
	2012	5,430,045	1,136,394	1,171,012	4,113,986	21%	3,743	10%
	2013	5,333,780	2,668,146	1,335,922	5,594,692	50%	3,696	13%
	2014	5,208,400	1,378,871	1,878,986	5,272,032	26%	3,627	13%
	2015	5,088,376	2,771,917	2,081,740	6,170,809	54%	3,580	15%
	2016	4,987,818	2,744,892	2,664,681	4,207,252	55%	3,530	17%
Projected Future Experience (60 Years)	2017	5,224,200	3,939,808	2,074,394	4,516,782	75%	3,457	19%
	2018	5,107,957	4,620,123	3,050,196	5,706,960	90%	3,379	22%
	2019	6,974,298	5,413,306	4,285,131	6,802,533	78%	3,296	25%
	2020	8,823,504	6,284,875	5,383,642	7,930,826	71%	3,207	27%
	2021	8,577,893	7,154,888	6,281,288	9,066,155	83%	3,114	30%
	2022	8,317,103	8,076,170	7,115,541	10,324,194	97%	3,015	32%
	2023	8,041,518	9,050,810	8,032,003	11,679,148	113%	2,910	35%
	2024	7,751,665	10,085,272	9,021,542	13,120,479	130%	2,801	38%
	2025	7,447,809	11,174,236	10,065,923	14,650,293	150%	2,687	42%
	2026	7,130,336	12,284,503	11,154,803	16,247,299	172%	2,567	45%
	2027	6,800,126	13,459,252	12,294,048	17,927,897	198%	2,443	49%
	2028	6,457,019	14,717,890	13,494,831	19,717,344	228%	2,314	52%
	2029	6,101,055	15,953,005	14,734,175	21,555,037	261%	2,180	56%
	2030	5,734,215	17,082,182	15,959,639	23,347,916	298%	2,043	60%
	2031	5,358,903	18,088,421	17,122,709	25,032,527	338%	1,903	64%
	2032	4,977,761	18,939,827	18,185,050	26,550,203	380%	1,762	68%
	2033	4,594,096	19,614,833	19,114,729	27,851,247	427%	1,620	72%
	2034	4,211,322	20,117,478	19,886,397	28,914,561	478%	1,480	76%
	2035	3,832,840	20,385,057	20,467,199	29,687,743	532%	1,342	80%
	2036	3,462,377	20,414,416	20,835,544	30,135,862	590%	1,208	83%
	2037	3,103,392	20,168,858	20,965,548	30,211,934	650%	1,079	87%
	2038	2,759,020	19,676,967	20,844,401	29,910,047	713%	956	90%
	2039	2,432,225	18,942,978	20,467,500	29,233,100	779%	840	93%
	2040	2,125,523	18,010,852	19,846,735	28,216,876	847%	733	96%
	2041	1,841,101	16,939,582	19,017,801	26,922,099	920%	633	98%
	2042	1,580,243	15,745,888	18,015,493	25,392,762	996%	542	100%
	2043	1,343,931	14,432,939	16,865,157	23,651,500	1,074%	461	102%
	2044	1,132,377	13,086,040	15,603,633	21,771,285	1,156%	388	104%
	2045	945,263	11,746,664	14,274,885	19,824,584	1,243%	324	105%
	2046	781,676	10,429,235	12,918,835	17,859,872	1,334%	268	106%
	2047	640,342	9,151,694	11,567,916	15,912,287	1,429%	220	108%
	2048	519,696	7,924,185	10,242,555	14,007,468	1,525%	179	108%
	2049	417,957	6,790,958	8,969,586	12,189,683	1,625%	144	109%
	2050	333,078	5,769,814	7,773,187	10,497,898	1,732%	115	110%
	2051	263,060	4,861,411	6,670,362	8,955,424	1,848%	92	110%
	2052-2056	648,214	14,217,665	20,439,298	27,085,648	2,193%	231	111%
	2057-2061	154,575	4,723,045	7,399,853	9,661,675	3,055%	58	112%
	2062-2066	30,345	1,303,520	2,223,206	2,939,190	4,296%	12	112%
	2067-2071	4,916	288,128	561,374	753,187	5,861%	2	112%
	2072-2076	607	47,550	115,854	151,890	7,830%	0	112%

[1] Actual earned premium increases from the history to projection because of differences in the treatment of waiver of premium. Historical data reduced earned premium for waiver, whereas projections treat waiver as an increase to claims with no impact on premium. The difference in the treatment of waiver has an immaterial impact on the lifetime loss ratio.

[2] Incurred Claims are discounted to the year of incurral, whereas Paid Claims and Claim Reserves are calendar year values that are not discounted to the date of incurral.

**Attachment 9D**  
**Massachusetts Mutual Life Insurance Company**  
**Actual and Projected Experience by Calendar Year**  
**Nationwide Experience Restated to Proposed Increase From Inception**  
**Lifetime-Pay Policy Forms Issued Prior to October 1, 2003 with Non-Lifetime Benefit Periods and Auto Inflation**

	Calendar Year	Actual or Projected Experience using Current Assumptions						Cumulative LR with Interest
		A Earned Premium <sup>[1]</sup>	B Incurred Claims <sup>[2]</sup>	C Paid Claims <sup>[2]</sup>	D Claim Reserves <sup>[2]</sup>	E = B / A Incurred Loss Ratio	F End of Year Lives	G Actual (Column E) with Max. Val. Interest
Historical Experience	2000	195,084	0	0	0	0%	358	0%
	2001	2,633,657	0	0	0	0%	1,608	0%
	2002	6,433,666	4,873	0	4,958	0%	3,149	0%
	2003	10,677,382	98,277	9,149	96,033	1%	4,279	1%
	2004	11,449,271	44,298	45,063	98,471	0%	4,174	0%
	2005	11,154,394	181,911	87,877	198,869	2%	4,107	1%
	2006	10,964,997	566,796	128,409	653,870	5%	4,055	2%
	2007	10,795,553	232,279	229,913	675,530	2%	4,006	2%
	2008	10,574,880	912,048	266,234	1,353,438	9%	3,936	3%
	2009	10,393,415	1,045,701	352,017	2,096,819	10%	3,893	3%
	2010	10,219,601	1,485,771	640,922	3,017,121	15%	3,848	4%
	2011	10,026,855	1,752,036	840,713	4,030,612	17%	3,793	5%
	2012	9,850,531	1,136,394	1,171,012	4,113,986	12%	3,743	6%
	2013	9,679,443	2,668,146	1,335,922	5,594,692	28%	3,696	7%
	2014	9,460,450	1,378,871	1,878,986	5,272,032	15%	3,627	7%
	2015	9,248,724	2,771,917	2,081,740	6,170,809	30%	3,580	9%
	2016	9,074,268	2,744,892	2,664,681	4,207,252	30%	3,530	9%
Projected Future Experience (60 Years)	2017	9,469,503	4,001,294	2,085,325	4,559,459	42%	3,457	11%
	2018	9,268,911	4,688,890	3,084,928	5,779,477	51%	3,379	12%
	2019	9,053,780	5,450,399	4,329,266	6,867,587	60%	3,296	14%
	2020	8,823,504	6,284,875	5,416,038	7,964,612	71%	3,207	16%
	2021	8,577,893	7,154,888	6,299,398	9,082,417	83%	3,114	17%
	2022	8,317,103	8,076,170	7,125,104	10,331,176	97%	3,015	19%
	2023	8,041,518	9,050,810	8,037,009	11,681,245	113%	2,910	21%
	2024	7,751,665	10,085,272	9,023,424	13,120,731	130%	2,801	24%
	2025	7,447,809	11,174,236	10,066,178	14,650,293	150%	2,687	26%
	2026	7,130,336	12,284,503	11,154,803	16,247,299	172%	2,567	28%
	2027	6,800,126	13,459,252	12,294,048	17,927,897	198%	2,443	31%
	2028	6,457,019	14,717,890	13,494,831	19,717,344	228%	2,314	33%
	2029	6,101,055	15,953,005	14,734,175	21,555,037	261%	2,180	36%
	2030	5,734,215	17,082,182	15,959,639	23,347,916	298%	2,043	39%
	2031	5,358,903	18,088,421	17,122,709	25,032,527	338%	1,903	42%
	2032	4,977,761	18,939,827	18,185,050	26,550,203	380%	1,762	44%
	2033	4,594,096	19,614,833	19,114,729	27,851,247	427%	1,620	47%
	2034	4,211,322	20,117,478	19,886,397	28,914,561	478%	1,480	50%
	2035	3,832,840	20,385,057	20,467,199	29,687,743	532%	1,342	52%
	2036	3,462,377	20,414,416	20,835,544	30,135,862	590%	1,208	55%
	2037	3,103,392	20,168,858	20,965,548	30,211,934	650%	1,079	57%
	2038	2,759,020	19,676,967	20,844,401	29,910,047	713%	956	60%
	2039	2,432,225	18,942,978	20,467,500	29,233,100	779%	840	62%
	2040	2,125,523	18,010,852	19,846,735	28,216,876	847%	733	63%
	2041	1,841,101	16,939,582	19,017,801	26,922,099	920%	633	65%
	2042	1,580,243	15,745,888	18,015,493	25,392,762	996%	542	67%
	2043	1,343,931	14,432,939	16,865,157	23,651,500	1,074%	461	68%
	2044	1,132,377	13,086,040	15,603,633	21,771,285	1,156%	388	69%
	2045	945,263	11,746,664	14,274,885	19,824,584	1,243%	324	70%
	2046	781,676	10,429,235	12,918,835	17,859,872	1,334%	268	71%
	2047	640,342	9,151,694	11,567,916	15,912,287	1,429%	220	72%
	2048	519,696	7,924,185	10,242,555	14,007,468	1,525%	179	72%
	2049	417,957	6,790,958	8,969,586	12,189,683	1,625%	144	73%
	2050	333,078	5,769,814	7,773,187	10,497,898	1,732%	115	73%
	2051	263,060	4,861,411	6,670,362	8,955,424	1,848%	92	73%
	2052-2056	648,214	14,217,665	20,439,298	27,085,648	2,193%	231	74%
	2057-2061	154,575	4,723,045	7,399,853	9,661,675	3,055%	58	74%
	2062-2066	30,345	1,303,520	2,223,206	2,939,190	4,296%	12	74%
	2067-2071	4,916	288,128	561,374	753,187	5,861%	2	74%
	2072-2076	607	47,550	115,854	151,890	7,830%	0	74%

[1] Actual earned premium increases from the history to projection because of differences in the treatment of waiver of premium. Historical data reduced earned premium for waiver, whereas projections treat waiver as an increase to claims with no impact on premium. The difference in the treatment of waiver has an immaterial impact on the lifetime loss ratio.

[2] Incurred Claims are discounted to the year of incurral, whereas Paid Claims and Claim Reserves are calendar year values that are not discounted to the date of incurral.

**Attachment 9E**  
**Massachusetts Mutual Life Insurance Company**  
**Projected Experience by Calendar Year**  
**Nationwide Expected Experience**  
**Lifetime-Pay Policy Forms Issued Prior to October 1, 2003 with Non-Lifetime Benefit Periods and Auto Inflation**

	Calendar Year	Projected Experience using Pricing Assumptions						Cumulative LR with Interest
		A  Earned Premium	B  Incurred Claims <sup>[1]</sup>	C  Paid Claims <sup>[1]</sup>	D  Claim Reserves <sup>[1]</sup>	E = B / A  Incurred Loss Ratio	F  End of Year Lives	G  Actual (Column E) with Max. Val. Interest
Projected Experience	2000	110,887	1,760	214	1,521	2%	359	2%
	2001	1,514,943	24,569	3,685	22,034	2%	1,632	2%
	2002	3,606,997	80,802	19,050	81,985	2%	3,139	2%
	2003	5,855,055	198,836	59,223	216,637	3%	4,187	3%
	2004	6,064,331	373,858	140,261	440,819	6%	3,908	4%
	2005	5,653,862	614,969	273,622	769,230	11%	3,692	6%
	2006	5,355,101	906,440	466,960	1,195,420	17%	3,513	7%
	2007	5,098,652	1,187,446	712,471	1,662,580	23%	3,356	10%
	2008	4,863,750	1,428,666	983,993	2,113,085	29%	3,206	12%
	2009	4,637,907	1,607,582	1,251,287	2,497,443	35%	3,059	14%
	2010	4,418,209	1,778,303	1,495,240	2,837,379	40%	2,915	16%
	2011	4,203,511	1,963,906	1,719,456	3,167,152	47%	2,773	18%
	2012	3,992,381	2,163,046	1,933,138	3,505,147	54%	2,632	20%
	2013	3,783,645	2,375,264	2,145,519	3,859,968	63%	2,492	22%
	2014	3,576,625	2,599,559	2,364,184	4,235,240	73%	2,353	24%
	2015	3,370,739	2,833,799	2,595,564	4,630,844	84%	2,216	26%
	2016	3,162,384	3,073,948	2,841,472	5,042,596	97%	2,075	29%
	2017	2,947,396	3,298,879	3,095,622	5,449,963	112%	1,930	31%
	2018	2,726,145	3,496,496	3,344,227	5,831,455	128%	1,782	33%
	2019	2,504,601	3,660,118	3,574,959	6,170,465	146%	1,638	36%
	2020	2,289,835	3,800,425	3,783,361	6,467,883	166%	1,500	38%
	2021	2,084,118	3,920,308	3,967,206	6,727,071	188%	1,368	40%
	2022	1,887,876	4,017,134	4,125,430	6,947,513	213%	1,242	42%
	2023	1,701,524	4,086,135	4,257,029	7,124,649	240%	1,122	45%
	2024	1,525,462	4,122,755	4,359,978	7,252,005	270%	1,009	47%
	2025	1,360,049	4,125,444	4,431,764	7,324,487	303%	903	49%
	2026	1,205,571	4,097,885	4,470,573	7,342,185	340%	804	51%
	2027	1,062,227	4,037,900	4,475,459	7,303,469	380%	712	53%
	2028	930,126	3,944,002	4,445,142	7,206,131	424%	627	54%
	2029	809,253	3,818,615	4,379,052	7,050,841	472%	548	56%
	2030	699,466	3,666,123	4,278,179	6,841,649	524%	477	57%
	2031	600,498	3,490,374	4,145,013	6,583,890	581%	412	59%
	2032	511,978	3,294,353	3,982,449	6,282,842	643%	354	60%
	2033	433,438	3,081,806	3,793,897	5,944,537	711%	302	61%
	2034	364,324	2,856,664	3,583,406	5,575,462	784%	256	62%
	2035	304,019	2,622,079	3,355,101	5,181,555	862%	216	63%
	2036	251,846	2,384,397	3,113,210	4,771,253	947%	181	64%
	2037	207,093	2,149,108	2,862,712	4,353,927	1,038%	150	64%
	2038	169,037	1,917,640	2,608,532	3,935,936	1,134%	124	65%
	2039	136,958	1,694,460	2,354,783	3,524,334	1,237%	101	66%
	2040	110,154	1,483,435	2,105,859	3,126,262	1,347%	83	66%
	2041	87,955	1,286,502	1,865,927	2,747,360	1,463%	67	66%
	2042	69,733	1,104,969	1,638,158	2,391,753	1,585%	54	67%
	2043	54,907	939,939	1,424,859	2,062,584	1,712%	43	67%
	2044	42,947	792,322	1,227,721	1,762,309	1,845%	34	67%
	2045	33,378	661,601	1,047,884	1,491,740	1,982%	27	67%
	2046	25,787	547,377	885,944	1,250,912	2,123%	21	67%
	2047	19,815	449,065	742,042	1,039,422	2,266%	16	67%
	2048	15,152	365,494	616,040	856,125	2,412%	13	67%
	2049	11,537	295,480	507,032	699,408	2,561%	10	67%
	2050	8,753	237,585	413,878	567,199	2,714%	8	68%
	2051	6,622	190,209	335,409	457,052	2,872%	6	68%
	2052-2056	15,386	502,420	905,122	1,216,566	3,265%	14	68%
	2057-2061	3,847	153,623	280,397	365,629	3,993%	4	68%
	2062-2066	1,022	47,802	86,097	108,971	4,679%	1	68%
	2067-2071	259	13,708	25,891	31,012	5,286%	0	68%
	2072-2076	53	2,747	6,734	6,727	5,208%	0	68%

[1] Incurred Claims are discounted to the year of incurral, whereas Paid Claims and Claim Reserves are calendar year values that are not discounted to the date of incurral.



**Attachment 9F**  
**Massachusetts Mutual Life Insurance Company**  
**Actual and Projected Experience by Calendar Year**  
**Nationwide Experience - Before Requested Rate Increase**  
**Lifetime-Pay Policy Forms Issued Prior to October 1, 2003 with Non-Lifetime Benefit Periods and Auto Inflation**

		Actual or Projected Experience using Original Pricing Assumptions						Cumulative LR with Interest
	Calendar Year	A  Earned Premium <sup>[1]</sup>	B  Incurred Claims <sup>[2]</sup>	C  Paid Claims <sup>[2][3]</sup>	D  Claim Reserves <sup>[2][3]</sup>	E = B / A	F  End of Year Lives	G  Actual (Column E) with Max. Val. Interest
Historical Experience	2000	111,035	0	0	0	0%	358	0%
	2001	1,495,068	0	0	0	0%	1,608	0%
	2002	3,601,379	4,873	0	4,958	0%	3,149	0%
	2003	5,918,801	98,277	9,149	96,033	2%	4,279	1%
	2004	6,341,651	44,298	45,063	98,471	1%	4,174	1%
	2005	6,176,391	181,911	87,877	198,869	3%	4,107	1%
	2006	6,069,245	566,796	128,409	653,870	9%	4,055	3%
	2007	5,972,811	232,279	229,913	675,530	4%	4,006	3%
	2008	5,851,472	912,048	266,234	1,353,438	16%	3,936	5%
	2009	5,748,609	1,045,701	352,017	2,096,819	18%	3,893	6%
	2010	5,646,223	1,485,771	640,922	3,017,121	26%	3,848	8%
	2011	5,530,468	1,752,036	840,713	4,030,612	32%	3,793	10%
	2012	5,430,045	1,136,394	1,171,012	4,113,986	21%	3,743	10%
	2013	5,333,780	2,668,146	1,335,922	5,594,692	50%	3,696	13%
	2014	5,208,400	1,378,871	1,878,986	5,272,032	26%	3,627	13%
	2015	5,088,376	2,771,917	2,081,740	6,170,809	54%	3,580	15%
	2016	4,987,818	2,744,892	2,664,681	4,207,252	55%	3,530	17%
Projected Future Experience (60 Years)	2017	5,018,349	6,189,165	0	0	123%	3,280	21%
	2018	4,634,685	6,558,233	0	0	142%	3,026	25%
	2019	4,251,106	6,859,930	0	0	161%	2,777	29%
	2020	3,879,983	7,117,004	0	0	183%	2,539	33%
	2021	3,525,100	7,335,031	0	0	208%	2,311	36%
	2022	3,187,139	7,507,522	0	0	236%	2,094	40%
	2023	2,866,764	7,624,879	0	0	266%	1,888	43%
	2024	2,564,598	7,680,957	0	0	299%	1,694	46%
	2025	2,281,200	7,672,150	0	0	336%	1,512	50%
	2026	2,017,002	7,606,176	0	0	377%	1,342	52%
	2027	1,772,295	7,478,512	0	0	422%	1,184	55%
	2028	1,547,231	7,286,988	0	0	471%	1,039	58%
	2029	1,341,742	7,035,953	0	0	524%	905	60%
	2030	1,155,540	6,734,082	0	0	583%	784	62%
	2031	988,122	6,389,220	0	0	647%	675	64%
	2032	838,801	6,007,882	0	0	716%	577	66%
	2033	706,728	5,598,047	0	0	792%	489	68%
	2034	590,911	5,166,328	0	0	874%	412	69%
	2035	490,239	4,719,550	0	0	963%	345	70%
	2036	403,512	4,269,187	0	0	1,058%	286	71%
	2037	329,466	3,825,270	0	0	1,161%	236	72%
	2038	266,823	3,392,159	0	0	1,271%	193	73%
	2039	214,318	2,977,206	0	0	1,389%	157	74%
	2040	170,727	2,587,041	0	0	1,515%	126	74%
	2041	134,882	2,224,826	0	0	1,649%	101	75%
	2042	105,688	1,893,104	0	0	1,791%	80	75%
	2043	82,140	1,594,131	0	0	1,941%	63	76%
	2044	63,321	1,328,736	0	0	2,098%	49	76%
	2045	48,421	1,095,763	0	0	2,263%	38	76%
	2046	36,735	894,095	0	0	2,434%	29	76%
	2047	27,657	722,377	0	0	2,612%	22	76%
	2048	20,668	578,389	0	0	2,798%	17	76%
	2049	15,332	459,350	0	0	2,996%	13	76%
	2050	11,290	362,277	0	0	3,209%	9	77%
	2051	8,255	283,707	0	0	3,437%	7	77%
	2052-2056	17,163	693,518	0	0	4,041%	15	77%
	2057-2061	2,975	165,678	0	0	5,569%	3	77%
	2062-2066	419	29,923	0	0	7,139%	0	77%
	2067-2071	43	3,422	0	0	7,886%	0	77%
	2072-2076	3	212	0	0	6,989%	0	77%

[1] Actual earned premium increases from the history to projection because of differences in the treatment of waiver of premium. Historical data reduced earned premium for waiver, whereas projections treat waiver as an increase to claims with no impact on premium. The difference in the treatment of waiver has an immaterial impact on the lifetime loss ratio.

[2] Incurred Claims are discounted to the year of incurral, whereas Paid Claims and Claim Reserves are calendar year values that are not discounted to the date of incurral.

[3] Projected values for paid claims and claim reserves are not readily available in the model used to project original pricing assumptions based on actual historical experience.

**Attachment 10A**  
**Massachusetts Mutual Life Insurance Company**  
**Actual and Projected Experience by Calendar Year**  
**Nationwide Experience - Before Requested Rate Increase**  
**Lifetime-Pay Policy Forms Issued Prior to October 1, 2003 with a Lifetime Benefit Period and No Inflation**

	Calendar Year	Actual or Projected Experience using Current Assumptions						Cumulative LR with Interest
		A Earned Premium <sup>[1]</sup>	B Incurred Claims <sup>[2]</sup>	C Paid Claims <sup>[2]</sup>	D Claim Reserves <sup>[2]</sup>	E = B / A Incurred Loss Ratio	F End of Year Lives	G Actual (Column E) with Max. Val. Interest
Historical Experience	2000	77,821	0	0	0	0%	241	0%
	2001	912,200	19,477	6,991	12,943	2%	805	2%
	2002	1,803,144	504,181	13,000	513,318	28%	1,346	18%
	2003	2,570,743	737,611	78,012	1,195,950	29%	1,603	23%
	2004	2,694,163	231,335	197,595	1,257,823	9%	1,546	19%
	2005	2,594,686	1,306,052	243,933	2,368,584	50%	1,500	26%
	2006	2,535,707	749,714	441,998	2,738,648	30%	1,481	26%
	2007	2,487,631	936,667	469,081	3,278,408	38%	1,443	28%
	2008	2,430,940	818,344	692,427	3,487,211	34%	1,413	29%
	2009	2,345,349	1,094,299	862,816	3,816,920	47%	1,346	30%
	2010	2,276,008	1,144,691	819,034	4,250,049	50%	1,317	32%
	2011	2,182,246	1,998,262	1,097,716	5,288,382	92%	1,291	36%
	2012	2,085,446	1,454,826	1,378,838	5,543,849	70%	1,257	38%
	2013	1,998,378	851,737	1,457,925	5,116,743	43%	1,234	39%
	2014	1,923,435	2,460,283	1,575,878	6,260,447	128%	1,211	43%
	2015	1,864,544	1,850,090	1,680,546	6,667,977	99%	1,185	45%
	2016	1,776,213	1,335,727	1,914,216	5,286,536	75%	1,159	46%
Projected Future Experience (60 Years)	2017	1,971,039	2,663,755	1,530,350	5,305,770	135%	1,128	49%
	2018	1,898,421	2,860,274	1,750,086	6,248,796	151%	1,095	53%
	2019	1,822,358	3,042,793	2,252,505	7,081,735	167%	1,061	56%
	2020	1,743,208	3,206,960	2,647,703	7,819,496	184%	1,024	59%
	2021	1,661,531	3,333,552	2,889,215	8,457,332	201%	987	63%
	2022	1,578,041	3,442,915	3,099,250	9,007,460	218%	948	66%
	2023	1,493,311	3,539,026	3,282,246	9,481,915	237%	907	69%
	2024	1,407,915	3,614,638	3,439,302	9,884,469	257%	866	72%
	2025	1,322,409	3,678,144	3,571,481	10,226,436	278%	824	75%
	2026	1,237,203	3,710,525	3,677,758	10,501,002	300%	781	78%
	2027	1,152,763	3,736,751	3,762,724	10,722,048	324%	737	81%
	2028	1,069,341	3,759,289	3,831,241	10,901,339	352%	693	83%
	2029	987,172	3,757,661	3,882,305	11,031,021	381%	649	86%
	2030	906,813	3,720,084	3,911,444	11,095,586	410%	604	89%
	2031	828,742	3,647,694	3,915,117	11,083,951	440%	560	91%
	2032	753,507	3,542,666	3,890,930	10,989,452	470%	517	93%
	2033	681,365	3,418,757	3,840,009	10,818,176	502%	475	95%
	2034	612,996	3,275,299	3,763,541	10,574,448	534%	433	97%
	2035	548,434	3,111,334	3,662,306	10,260,918	567%	393	99%
	2036	488,029	2,928,722	3,537,569	9,880,905	600%	355	100%
	2037	431,801	2,725,039	3,389,762	9,434,888	631%	319	101%
	2038	379,798	2,508,168	3,220,752	8,929,510	660%	285	103%
	2039	332,218	2,292,591	3,035,356	8,381,443	690%	253	104%
	2040	288,919	2,076,046	2,837,416	7,801,505	719%	223	105%
	2041	249,660	1,863,251	2,630,787	7,201,648	746%	196	105%
	2042	214,576	1,657,311	2,419,419	6,593,238	772%	171	106%
	2043	183,289	1,461,054	2,207,107	5,986,923	797%	148	107%
	2044	155,672	1,279,895	1,997,908	5,394,985	822%	128	107%
	2045	131,485	1,114,447	1,795,385	4,826,982	848%	109	108%
	2046	110,385	965,032	1,602,296	4,290,208	874%	93	108%
	2047	92,268	828,992	1,420,370	3,787,645	898%	79	108%
	2048	76,672	704,568	1,250,241	3,319,910	919%	67	108%
	2049	63,357	596,953	1,093,334	2,891,485	942%	56	109%
	2050	52,183	504,479	950,520	2,504,361	967%	47	109%
	2051	42,717	425,029	821,953	2,158,261	995%	39	109%
	2052-2056	118,075	1,260,657	2,628,983	6,846,485	1,068%	112	109%
	2057-2061	38,651	471,511	1,109,963	2,859,415	1,220%	41	109%
	2062-2066	12,169	167,842	431,435	1,106,280	1,379%	15	109%
	2067-2071	3,802	56,042	158,607	403,697	1,474%	6	109%
	2072-2076	1,031	15,283	53,371	133,069	1,482%	2	109%

[1] Actual earned premium increases from the history to projection because of differences in the treatment of waiver of premium. Historical data reduced earned premium for waiver, whereas projections treat waiver as an increase to claims with no impact on premium. The difference in the treatment of waiver has an immaterial impact on the lifetime loss ratio.

[2] Incurred Claims are discounted to the year of incurral, whereas Paid Claims and Claim Reserves are calendar year values that are not discounted to the date of incurral.

**Attachment 10B**  
**Massachusetts Mutual Life Insurance Company**  
**Actual and Projected Experience by Calendar Year**  
**Nationwide Experience - After Requested Rate Increase**  
**Lifetime-Pay Policy Forms Issued Prior to October 1, 2003 with a Lifetime Benefit Period and No Inflation**

	Calendar Year	Actual or Projected Experience using Current Assumptions						Cumulative LR with Interest
		A  Earned Premium <sup>[1]</sup>	B  Incurred Claims <sup>[2]</sup>	C  Paid Claims <sup>[2]</sup>	D  Claim Reserves <sup>[2]</sup>	E = B / A  Incurred Loss Ratio	F  End of Year Lives	G  Actual (Column E) with Max. Val. Interest
Historical Experience	2000	77,821	0	0	0	0%	241	0%
	2001	912,200	19,477	6,991	12,943	2%	805	2%
	2002	1,803,144	504,181	13,000	513,318	28%	1,346	18%
	2003	2,570,743	737,611	78,012	1,195,950	29%	1,603	23%
	2004	2,694,163	231,335	197,595	1,257,823	9%	1,546	19%
	2005	2,594,686	1,306,052	243,933	2,368,584	50%	1,500	26%
	2006	2,535,707	749,714	441,998	2,738,648	30%	1,481	26%
	2007	2,487,631	936,667	469,081	3,278,408	38%	1,443	28%
	2008	2,430,940	818,344	692,427	3,487,211	34%	1,413	29%
	2009	2,345,349	1,094,299	862,816	3,816,920	47%	1,346	30%
	2010	2,276,008	1,144,691	819,034	4,250,049	50%	1,317	32%
	2011	2,182,246	1,998,262	1,097,716	5,288,382	92%	1,291	36%
	2012	2,085,446	1,454,826	1,378,838	5,543,849	70%	1,257	38%
	2013	1,998,378	851,737	1,457,925	5,116,743	43%	1,234	39%
	2014	1,923,435	2,460,283	1,575,878	6,260,447	128%	1,211	43%
	2015	1,864,544	1,850,090	1,680,546	6,667,977	99%	1,185	45%
	2016	1,776,213	1,335,727	1,914,216	5,286,536	75%	1,159	46%
Projected Future Experience (60 Years)	2017	1,971,039	2,663,755	1,530,350	5,305,770	135%	1,128	49%
	2018	1,898,421	2,860,274	1,750,086	6,248,796	151%	1,095	53%
	2019	2,207,261	2,784,216	2,198,656	6,875,355	126%	983	55%
	2020	2,500,311	2,665,652	2,473,438	7,233,101	107%	949	57%
	2021	2,384,159	2,763,855	2,606,635	7,563,764	116%	914	59%
	2022	2,265,401	2,847,380	2,727,337	7,864,434	126%	878	61%
	2023	2,144,844	2,919,292	2,836,128	8,134,690	136%	840	63%
	2024	2,023,296	2,974,086	2,931,409	8,370,099	147%	802	65%
	2025	1,901,540	3,018,530	3,011,906	8,574,310	159%	762	67%
	2026	1,780,154	3,037,231	3,075,449	8,737,546	171%	723	68%
	2027	1,659,788	3,050,445	3,124,849	8,867,657	184%	682	70%
	2028	1,540,791	3,060,487	3,163,509	8,971,583	199%	641	72%
	2029	1,423,487	3,050,909	3,190,244	9,040,833	214%	600	74%
	2030	1,308,666	3,012,326	3,201,033	9,061,242	230%	559	75%
	2031	1,197,006	2,946,168	3,192,678	9,023,054	246%	518	77%
	2032	1,089,292	2,854,201	3,162,961	8,920,358	262%	478	78%
	2033	985,896	2,747,585	3,112,594	8,757,783	279%	438	79%
	2034	887,782	2,626,112	3,042,477	8,538,922	296%	400	81%
	2035	795,020	2,489,174	2,953,278	8,266,149	313%	363	82%
	2036	708,107	2,338,419	2,846,097	7,942,455	330%	328	83%
	2037	627,098	2,171,637	2,721,301	7,568,265	346%	294	84%
	2038	552,079	1,995,096	2,580,389	7,148,892	361%	263	85%
	2039	483,347	1,820,447	2,427,221	6,697,731	377%	233	85%
	2040	420,721	1,645,962	2,264,902	6,223,550	391%	206	86%
	2041	363,863	1,475,254	2,096,509	5,735,866	405%	181	86%
	2042	312,980	1,310,524	1,925,126	5,243,515	419%	157	87%
	2043	267,553	1,153,916	1,753,696	4,754,727	431%	136	87%
	2044	227,412	1,009,646	1,585,360	4,279,022	444%	118	88%
	2045	192,211	878,162	1,422,874	3,823,785	457%	101	88%
	2046	161,475	759,642	1,268,340	3,394,607	470%	86	88%
	2047	135,057	651,931	1,123,080	2,993,664	483%	73	88%
	2048	112,290	553,576	987,522	2,621,261	493%	61	88%
	2049	92,837	468,598	862,728	2,280,738	505%	51	88%
	2050	76,501	395,669	749,327	1,973,515	517%	43	89%
	2051	62,653	333,087	647,388	1,699,232	532%	36	89%
	2052-2056	173,346	986,104	2,066,116	5,378,512	569%	103	89%
	2057-2061	56,823	367,804	869,306	2,238,528	647%	37	89%
	2062-2066	17,907	130,672	336,982	863,765	730%	14	89%
	2067-2071	5,596	43,568	123,626	314,575	779%	5	89%
	2072-2076	1,518	11,868	41,537	103,546	782%	2	89%

[1] Actual earned premium increases from the history to projection because of differences in the treatment of waiver of premium. Historical data reduced earned premium for waiver, whereas projections treat waiver as an increase to claims with no impact on premium. The difference in the treatment of waiver has an immaterial impact on the lifetime loss ratio.

[2] Incurred Claims are discounted to the year of incurral, whereas Paid Claims and Claim Reserves are calendar year values that are not discounted to the date of incurral.

**Attachment 10C**  
**Massachusetts Mutual Life Insurance Company**  
**Actual and Projected Experience by Calendar Year**  
**Nationwide Experience - After Requested Rate Increase without RBO, CBUL, and Adverse Selection**  
**Lifetime-Pay Policy Forms Issued Prior to October 1, 2003 with a Lifetime Benefit Period and No Inflation**

	Calendar Year	Actual or Projected Experience using Current Assumptions						Cumulative LR with Interest
		A Earned Premium <sup>[1]</sup>	B Incurred Claims <sup>[2]</sup>	C Paid Claims <sup>[2]</sup>	D Claim Reserves <sup>[2]</sup>	E = B / A Incurred Loss Ratio	F End of Year Lives	G Actual (Column E) with Max. Val. Interest
Historical Experience	2000	77,821	0	0	0	0%	241	0%
	2001	912,200	19,477	6,991	12,943	2%	805	2%
	2002	1,803,144	504,181	13,000	513,318	28%	1,346	18%
	2003	2,570,743	737,611	78,012	1,195,950	29%	1,603	23%
	2004	2,694,163	231,335	197,595	1,257,823	9%	1,546	19%
	2005	2,594,686	1,306,052	243,933	2,368,584	50%	1,500	26%
	2006	2,535,707	749,714	441,998	2,738,648	30%	1,481	26%
	2007	2,487,631	936,667	469,081	3,278,408	38%	1,443	28%
	2008	2,430,940	818,344	692,427	3,487,211	34%	1,413	29%
	2009	2,345,349	1,094,299	862,816	3,816,920	47%	1,346	30%
	2010	2,276,008	1,144,691	819,034	4,250,049	50%	1,317	32%
	2011	2,182,246	1,998,262	1,097,716	5,288,382	92%	1,291	36%
	2012	2,085,446	1,454,826	1,378,838	5,543,849	70%	1,257	38%
	2013	1,998,378	851,737	1,457,925	5,116,743	43%	1,234	39%
	2014	1,923,435	2,460,283	1,575,878	6,260,447	128%	1,211	43%
	2015	1,864,544	1,850,090	1,680,546	6,667,977	99%	1,185	45%
	2016	1,776,213	1,335,727	1,914,216	5,286,536	75%	1,159	46%
Projected Future Experience (60 Years)	2017	1,971,039	2,663,755	1,530,350	5,305,770	135%	1,128	49%
	2018	1,898,421	2,860,274	1,750,086	6,248,796	151%	1,095	53%
	2019	2,607,278	3,108,954	2,266,342	7,134,479	119%	1,061	55%
	2020	3,281,040	3,340,467	2,691,311	7,965,370	102%	1,024	58%
	2021	3,130,469	3,466,734	2,957,816	8,672,630	111%	987	60%
	2022	2,976,442	3,574,946	3,186,562	9,273,504	120%	948	62%
	2023	2,819,997	3,669,224	3,383,247	9,784,031	130%	907	64%
	2024	2,662,169	3,742,252	3,549,963	10,210,995	141%	866	66%
	2025	2,503,967	3,802,810	3,688,614	10,568,323	152%	824	69%
	2026	2,346,131	3,831,309	3,798,719	10,850,740	163%	781	71%
	2027	2,189,491	3,853,457	3,885,429	11,073,877	176%	737	73%
	2028	2,034,482	3,871,962	3,954,086	11,251,057	190%	693	75%
	2029	1,881,512	3,865,938	4,003,957	11,375,310	205%	649	76%
	2030	1,731,609	3,823,298	4,030,727	11,431,569	221%	604	78%
	2031	1,585,644	3,745,149	4,030,994	11,409,033	236%	560	80%
	2032	1,444,643	3,633,889	4,002,519	11,301,391	252%	517	82%
	2033	1,309,107	3,503,631	3,946,627	11,115,255	268%	475	83%
	2034	1,180,273	3,353,822	3,864,681	10,855,427	284%	433	84%
	2035	1,058,277	3,183,507	3,757,598	10,524,904	301%	393	86%
	2036	943,753	2,994,560	3,626,755	10,127,265	317%	355	87%
	2037	836,825	2,784,432	3,472,633	9,663,075	333%	319	88%
	2038	737,627	2,561,185	3,297,169	9,139,175	347%	285	89%
	2039	646,577	2,339,627	3,105,305	8,572,649	362%	253	90%
	2040	563,470	2,117,485	2,900,989	7,974,613	376%	223	90%
	2041	487,881	1,899,477	2,688,157	7,357,243	389%	196	91%
	2042	420,110	1,688,725	2,470,824	6,732,087	402%	171	92%
	2043	359,508	1,488,079	2,252,846	6,109,935	414%	148	92%
	2044	305,880	1,303,011	2,038,328	5,503,229	426%	128	92%
	2045	258,774	1,134,111	1,830,875	4,921,620	438%	109	93%
	2046	217,589	981,677	1,633,264	4,372,452	451%	93	93%
	2047	182,138	842,981	1,447,229	3,858,689	463%	79	93%
	2048	151,544	716,201	1,273,387	3,380,875	473%	67	93%
	2049	125,376	606,593	1,113,161	2,943,487	484%	56	93%
	2050	103,380	512,461	967,414	2,548,494	496%	47	94%
	2051	84,718	431,618	836,276	2,195,539	509%	39	94%
	2052-2056	234,692	1,279,093	2,672,487	6,958,636	545%	112	94%
	2057-2061	77,075	477,727	1,126,654	2,901,847	620%	41	94%
	2062-2066	24,319	169,851	437,345	1,121,226	698%	15	94%
	2067-2071	7,603	56,644	160,587	408,680	745%	6	94%
	2072-2076	2,063	15,431	53,981	134,579	748%	2	94%

[1] Actual earned premium increases from the history to projection because of differences in the treatment of waiver of premium. Historical data reduced earned premium for waiver, whereas projections treat waiver as an increase to claims with no impact on premium. The difference in the treatment of waiver has an immaterial impact on the lifetime loss ratio.

[2] Incurred Claims are discounted to the year of incurral, whereas Paid Claims and Claim Reserves are calendar year values that are not discounted to the date of incurral.

**Attachment 10D**  
**Massachusetts Mutual Life Insurance Company**  
**Actual and Projected Experience by Calendar Year**  
**Nationwide Experience Restated to Proposed Increase From Inception**  
**Lifetime-Pay Policy Forms Issued Prior to October 1, 2003 with a Lifetime Benefit Period and No Inflation**

	Calendar Year	Actual or Projected Experience using Current Assumptions						Cumulative LR with Interest
		A Earned Premium <sup>[1]</sup>	B Incurred Claims <sup>[2]</sup>	C Paid Claims <sup>[2]</sup>	D Claim Reserves <sup>[2]</sup>	E = B / A Incurred Loss Ratio	F End of Year Lives	G Actual (Column E) with Max. Val. Interest
Historical Experience	2000	146,723	0	0	0	0%	241	0%
	2001	1,712,806	19,477	6,991	12,943	1%	805	1%
	2002	3,398,426	504,181	13,000	513,318	15%	1,346	10%
	2003	4,845,129	737,611	78,012	1,195,950	15%	1,603	12%
	2004	5,077,374	231,335	197,595	1,257,823	5%	1,546	10%
	2005	4,895,816	1,306,052	243,933	2,368,584	27%	1,500	14%
	2006	4,784,312	749,714	441,998	2,738,648	16%	1,481	14%
	2007	4,690,593	936,667	469,081	3,278,408	20%	1,443	15%
	2008	4,580,103	818,344	692,427	3,487,211	18%	1,413	15%
	2009	4,416,241	1,094,299	862,816	3,816,920	25%	1,346	16%
	2010	4,284,749	1,144,691	819,034	4,250,049	27%	1,317	17%
	2011	4,112,022	1,998,262	1,097,716	5,288,382	49%	1,291	19%
	2012	3,933,651	1,454,826	1,378,838	5,543,849	37%	1,257	20%
	2013	3,771,578	851,737	1,457,925	5,116,743	23%	1,234	20%
	2014	3,630,317	2,460,283	1,575,878	6,260,447	68%	1,211	23%
	2015	3,521,446	1,850,090	1,680,546	6,667,977	53%	1,185	24%
	2016	3,353,596	1,335,727	1,914,216	5,286,536	40%	1,159	24%
Projected Future Experience (60 Years)	2017	3,700,764	2,788,488	1,545,593	5,404,952	75%	1,128	26%
	2018	3,567,007	2,989,179	1,797,087	6,425,545	84%	1,095	28%
	2019	3,426,886	3,174,680	2,325,718	7,318,659	93%	1,061	30%
	2020	3,281,040	3,340,467	2,741,702	8,102,355	102%	1,024	32%
	2021	3,130,469	3,466,734	2,995,981	8,773,825	111%	987	34%
	2022	2,976,442	3,574,946	3,215,341	9,347,676	120%	948	36%
	2023	2,819,997	3,669,224	3,404,864	9,837,872	130%	907	37%
	2024	2,662,169	3,742,252	3,566,121	10,249,611	141%	866	39%
	2025	2,503,967	3,802,810	3,700,612	10,595,612	152%	824	41%
	2026	2,346,131	3,831,309	3,807,513	10,869,708	163%	781	42%
	2027	2,189,491	3,853,457	3,891,741	11,086,863	176%	737	44%
	2028	2,034,482	3,871,962	3,958,501	11,259,852	190%	693	45%
	2029	1,881,512	3,865,938	4,006,975	11,381,240	205%	649	47%
	2030	1,731,609	3,823,298	4,032,758	11,435,571	221%	604	48%
	2031	1,585,644	3,745,149	4,032,356	11,411,742	236%	560	49%
	2032	1,444,643	3,633,889	4,003,435	11,303,230	252%	517	50%
	2033	1,309,107	3,503,631	3,947,247	11,116,506	268%	475	52%
	2034	1,180,273	3,353,822	3,865,102	10,856,279	284%	433	53%
	2035	1,058,277	3,183,507	3,757,885	10,525,484	301%	393	53%
	2036	943,753	2,994,560	3,626,951	10,127,660	317%	355	54%
	2037	836,825	2,784,432	3,472,766	9,663,343	333%	319	55%
	2038	737,627	2,561,185	3,297,260	9,139,357	347%	285	56%
	2039	646,577	2,339,627	3,105,367	8,572,771	362%	253	56%
	2040	563,470	2,117,485	2,901,032	7,974,695	376%	223	57%
	2041	487,881	1,899,477	2,688,186	7,357,297	389%	196	57%
	2042	420,110	1,688,725	2,470,844	6,732,122	402%	171	57%
	2043	359,508	1,488,079	2,252,859	6,109,957	414%	148	58%
	2044	305,880	1,303,011	2,038,338	5,503,242	426%	128	58%
	2045	258,774	1,134,111	1,830,881	4,921,627	438%	109	58%
	2046	217,589	981,677	1,633,268	4,372,455	451%	93	58%
	2047	182,138	842,981	1,447,231	3,858,690	463%	79	59%
	2048	151,544	716,201	1,273,388	3,380,875	473%	67	59%
	2049	125,376	606,593	1,113,161	2,943,487	484%	56	59%
	2050	103,380	512,461	967,414	2,548,494	496%	47	59%
	2051	84,718	431,618	836,276	2,195,539	509%	39	59%
	2052-2056	234,692	1,279,093	2,672,487	6,958,636	545%	112	59%
	2057-2061	77,075	477,727	1,126,654	2,901,847	620%	41	59%
	2062-2066	24,319	169,851	437,345	1,121,226	698%	15	59%
	2067-2071	7,603	56,644	160,587	408,680	745%	6	59%
	2072-2076	2,063	15,431	53,981	134,579	748%	2	59%

[1] Actual earned premium increases from the history to projection because of differences in the treatment of waiver of premium. Historical data reduced earned premium for waiver, whereas projections treat waiver as an increase to claims with no impact on premium. The difference in the treatment of waiver has an immaterial impact on the lifetime loss ratio.

[2] Incurred Claims are discounted to the year of incurral, whereas Paid Claims and Claim Reserves are calendar year values that are not discounted to the date of incurral.

**Attachment 10E**  
**Massachusetts Mutual Life Insurance Company**  
**Projected Experience by Calendar Year**  
**Nationwide Expected Experience**  
**Lifetime-Pay Policy Forms Issued Prior to October 1, 2003 with a Lifetime Benefit Period and No Inflation**

	Calendar Year	Projected Experience using Pricing Assumptions						Cumulative LR with Interest
		A  Earned Premium	B  Incurred Claims <sup>[1]</sup>	C  Paid Claims <sup>[1]</sup>	D  Claim Reserves <sup>[1]</sup>	E = B / A  Incurred Loss Ratio	F  End of Year Lives	G  Actual (Column E) with Max. Val. Interest
Projected Experience	2000	77,763	2,011	275	1,769	3%	243	3%
	2001	907,691	23,684	3,921	21,877	3%	796	3%
	2002	1,748,151	66,370	17,485	72,387	4%	1,312	3%
	2003	2,460,641	148,087	48,636	177,134	6%	1,542	5%
	2004	2,513,858	259,799	106,161	343,985	10%	1,442	6%
	2005	2,351,760	401,625	193,832	578,597	17%	1,364	9%
	2006	2,215,755	560,595	312,262	873,575	25%	1,298	11%
	2007	2,094,259	690,196	451,049	1,183,786	33%	1,238	14%
	2008	1,980,796	788,755	591,319	1,478,344	40%	1,181	17%
	2009	1,872,118	850,922	717,562	1,731,972	45%	1,124	19%
	2010	1,767,450	903,992	821,781	1,951,829	51%	1,069	22%
	2011	1,665,917	956,516	907,218	2,149,663	57%	1,014	24%
	2012	1,566,545	1,006,649	978,043	2,331,313	64%	960	26%
	2013	1,468,593	1,053,391	1,039,092	2,499,569	72%	906	28%
	2014	1,371,568	1,095,435	1,094,003	2,655,009	80%	852	30%
	2015	1,275,162	1,132,193	1,145,057	2,797,497	89%	799	32%
	2016	1,177,106	1,163,688	1,194,498	2,927,000	99%	743	34%
	2017	1,075,514	1,178,342	1,236,033	3,033,304	110%	686	36%
	2018	972,269	1,173,582	1,261,158	3,107,547	121%	629	37%
	2019	871,054	1,151,160	1,270,245	3,145,300	132%	574	39%
	2020	776,364	1,119,976	1,264,144	3,151,200	144%	522	41%
	2021	689,279	1,083,535	1,244,940	3,131,052	157%	473	42%
	2022	609,500	1,041,431	1,214,992	3,088,158	171%	427	43%
	2023	536,712	994,655	1,176,461	3,025,426	185%	384	45%
	2024	470,601	943,359	1,131,086	2,944,797	200%	344	46%
	2025	410,831	888,752	1,080,328	2,848,473	216%	307	47%
	2026	357,083	832,201	1,025,253	2,739,006	233%	273	48%
	2027	309,017	774,788	966,987	2,619,014	251%	242	48%
	2028	266,270	716,521	906,321	2,490,253	269%	213	49%
	2029	228,467	658,151	844,202	2,354,600	288%	187	50%
	2030	195,221	600,369	781,354	2,213,910	308%	164	50%
	2031	166,135	544,664	718,566	2,070,730	328%	143	51%
	2032	140,823	491,277	656,769	1,927,021	349%	124	51%
	2033	118,914	440,403	596,596	1,784,358	370%	108	52%
	2034	100,054	392,416	538,484	1,644,222	392%	93	52%
	2035	83,902	347,633	483,120	1,507,964	414%	80	52%
	2036	70,134	306,407	431,029	1,376,847	437%	69	52%
	2037	58,451	268,813	382,489	1,251,882	460%	59	53%
	2038	48,580	234,630	337,663	1,133,656	483%	50	53%
	2039	40,272	203,864	296,566	1,022,678	506%	43	53%
	2040	33,307	176,263	259,174	919,155	529%	36	53%
	2041	27,489	151,823	225,410	823,314	552%	31	53%
	2042	22,644	130,419	195,190	735,281	576%	26	53%
	2043	18,621	111,651	168,382	654,854	600%	22	53%
	2044	15,289	95,350	144,713	581,803	624%	18	53%
	2045	12,534	81,165	123,945	515,705	648%	15	53%
	2046	10,262	68,917	105,817	456,153	672%	13	53%
	2047	8,389	58,463	90,098	402,770	697%	11	53%
	2048	6,848	49,540	76,558	355,098	723%	9	54%
	2049	5,581	41,957	64,964	312,672	752%	8	54%
	2050	4,538	35,508	55,050	275,004	782%	6	54%
	2051	3,681	30,000	46,594	241,592	815%	5	54%
	2052-2056	10,085	92,634	144,445	827,568	918%	15	54%
	2057-2061	3,178	37,439	60,517	417,013	1,178%	5	54%
	2062-2066	853	12,981	22,948	197,589	1,522%	2	54%
	2067-2071	179	3,392	7,004	84,959	1,893%	0	54%
	2072-2076	27	561	1,485	32,344	2,102%	0	54%

[1] Incurred Claims are discounted to the year of incurral, whereas Paid Claims and Claim Reserves are calendar year values that are not discounted to the date of incurral.

**Attachment 10F**  
**Massachusetts Mutual Life Insurance Company**  
**Actual and Projected Experience by Calendar Year**  
**Nationwide Experience - Before Requested Rate Increase**  
**Lifetime-Pay Policy Forms Issued Prior to October 1, 2003 with a Lifetime Benefit Period and No Inflation**

	Calendar Year	Actual or Projected Experience using Original Pricing Assumptions						Cumulative LR with Interest
		A  Earned Premium <sup>[1]</sup>	B  Incurred Claims <sup>[2]</sup>	C  Paid Claims <sup>[2][3]</sup>	D  Claim Reserves <sup>[2][3]</sup>	E = B / A  Incurred Loss Ratio	F  End of Year Lives	G  Actual (Column E) with Max. Val. Interest
Historical Experience	2000	77,821	0	0	0	0%	241	0%
	2001	912,200	19,477	6,991	12,943	2%	805	2%
	2002	1,803,144	504,181	13,000	513,318	28%	1,346	18%
	2003	2,570,743	737,611	78,012	1,195,950	29%	1,603	23%
	2004	2,694,163	231,335	197,595	1,257,823	9%	1,546	19%
	2005	2,594,686	1,306,052	243,933	2,368,584	50%	1,500	26%
	2006	2,535,707	749,714	441,998	2,738,648	30%	1,481	26%
	2007	2,487,631	936,667	469,081	3,278,408	38%	1,443	28%
	2008	2,430,940	818,344	692,427	3,487,211	34%	1,413	29%
	2009	2,345,349	1,094,299	862,816	3,816,920	47%	1,346	30%
	2010	2,276,008	1,144,691	819,034	4,250,049	50%	1,317	32%
	2011	2,182,246	1,998,262	1,097,716	5,288,382	92%	1,291	36%
	2012	2,085,446	1,454,826	1,378,838	5,543,849	70%	1,257	38%
	2013	1,998,378	851,737	1,457,925	5,116,743	43%	1,234	39%
	2014	1,923,435	2,460,283	1,575,878	6,260,447	128%	1,211	43%
	2015	1,864,544	1,850,090	1,680,546	6,667,977	99%	1,185	45%
	2016	1,776,213	1,335,727	1,914,216	5,286,536	75%	1,159	46%
Projected Future Experience (60 Years)	2017	1,777,779	2,201,599	0	0	124%	1,064	49%
	2018	1,595,819	2,183,232	0	0	137%	969	51%
	2019	1,418,379	2,129,713	0	0	150%	879	53%
	2020	1,253,467	2,059,805	0	0	164%	793	56%
	2021	1,103,019	1,981,095	0	0	180%	713	58%
	2022	966,322	1,891,951	0	0	196%	638	59%
	2023	842,655	1,794,011	0	0	213%	569	61%
	2024	731,327	1,688,605	0	0	231%	505	63%
	2025	631,602	1,578,106	0	0	250%	446	64%
	2026	542,791	1,464,555	0	0	270%	392	65%
	2027	464,170	1,350,064	0	0	291%	343	66%
	2028	394,980	1,235,140	0	0	313%	298	67%
	2029	334,442	1,121,650	0	0	335%	259	68%
	2030	281,774	1,011,341	0	0	359%	223	69%
	2031	236,211	906,470	0	0	384%	191	70%
	2032	197,024	807,026	0	0	410%	163	70%
	2033	163,519	712,809	0	0	436%	139	71%
	2034	135,046	624,664	0	0	463%	117	71%
	2035	110,989	543,695	0	0	490%	99	71%
	2036	90,776	470,189	0	0	518%	82	72%
	2037	73,890	404,084	0	0	547%	69	72%
	2038	59,863	344,797	0	0	576%	57	72%
	2039	48,275	292,286	0	0	605%	47	72%
	2040	38,755	246,035	0	0	635%	38	72%
	2041	30,977	205,814	0	0	664%	31	72%
	2042	24,658	171,229	0	0	694%	26	72%
	2043	19,550	141,509	0	0	724%	21	73%
	2044	15,441	116,344	0	0	753%	17	73%
	2045	12,153	95,061	0	0	782%	13	73%
	2046	9,533	77,234	0	0	810%	11	73%
	2047	7,456	62,477	0	0	838%	9	73%
	2048	5,815	50,333	0	0	866%	7	73%
	2049	4,523	40,456	0	0	895%	5	73%
	2050	3,508	32,429	0	0	924%	4	73%
	2051	2,715	25,882	0	0	953%	3	73%
	2052-2056	6,650	68,159	0	0	1,025%	9	73%
	2057-2061	1,757	20,422	0	0	1,162%	3	73%
	2062-2066	435	5,828	0	0	1,340%	1	73%
	2067-2071	92	1,464	0	0	1,584%	0	73%
	2072-2076	15	249	0	0	1,698%	0	73%

[1] Actual earned premium increases from the history to projection because of differences in the treatment of waiver of premium. Historical data reduced earned premium for waiver, whereas projections treat waiver as an increase to claims with no impact on premium. The difference in the treatment of waiver has an immaterial impact on the lifetime loss ratio.

[2] Incurred Claims are discounted to the year of incurral, whereas Paid Claims and Claim Reserves are calendar year values that are not discounted to the date of incurral.

[3] Projected values for paid claims and claim reserves are not readily available in the model used to project original pricing assumptions based on actual historical experience.

**Attachment 11A**  
**Massachusetts Mutual Life Insurance Company**  
**Actual and Projected Experience by Calendar Year**  
**Nationwide Experience - Before Requested Rate Increase**  
**Lifetime-Pay Policy Forms Issued Prior to October 1, 2003 with a Lifetime Benefit Period and Auto Inflation**

	Calendar Year	Actual or Projected Experience using Current Assumptions						Cumulative LR with Interest
		A Earned Premium <sup>[1]</sup>	B Incurred Claims <sup>[2]</sup>	C Paid Claims <sup>[2]</sup>	D Claim Reserves <sup>[2]</sup>	E = B / A Incurred Loss Ratio	F End of Year Lives	G Actual (Column E) with Max. Val. Interest
Historical Experience	2000	269,173	0	0	0	0%	797	0%
	2001	3,796,566	45,175	0	45,959	1%	3,753	1%
	2002	10,553,534	18,460	38,876	27,323	0%	8,464	0%
	2003	19,730,899	651,265	63,951	627,500	3%	12,564	2%
	2004	21,741,072	462,448	140,480	970,774	2%	12,270	2%
	2005	21,073,127	3,011,036	319,040	3,737,293	14%	12,065	5%
	2006	20,719,548	1,199,669	663,161	4,373,445	6%	11,912	5%
	2007	20,418,612	3,310,912	825,127	7,007,625	16%	11,766	7%
	2008	20,109,517	2,314,434	1,210,391	8,294,328	12%	11,625	8%
	2009	19,727,812	6,507,183	1,953,238	13,168,432	33%	11,443	10%
	2010	19,421,880	7,756,601	2,665,306	18,690,932	40%	11,338	13%
	2011	19,151,889	5,611,008	3,656,262	21,141,916	29%	11,237	14%
	2012	18,889,113	10,046,799	4,299,552	27,520,438	53%	11,128	17%
	2013	18,683,190	6,450,083	5,159,383	29,512,832	35%	11,032	18%
	2014	18,390,236	10,872,709	6,322,427	35,054,845	59%	10,927	20%
	2015	18,074,420	15,877,378	7,659,843	44,436,407	88%	10,802	24%
	2016	17,817,082	13,276,473	9,540,099	43,343,271	75%	10,697	26%
Projected Future Experience (60 Years)	2017	18,597,288	16,206,303	11,185,237	40,245,934	87%	10,530	29%
	2018	18,313,453	19,217,263	12,086,637	46,275,281	105%	10,354	31%
	2019	18,011,030	22,650,292	15,798,018	53,491,904	126%	10,166	35%
	2020	17,688,304	26,490,954	19,418,479	61,952,041	150%	9,967	38%
	2021	17,344,199	30,609,642	22,579,405	71,588,177	176%	9,756	42%
	2022	16,977,886	35,106,444	26,123,202	82,422,516	207%	9,533	47%
	2023	16,588,469	40,039,061	30,071,598	94,514,626	241%	9,297	51%
	2024	16,175,393	45,452,982	34,448,704	107,947,272	281%	9,049	57%
	2025	15,737,600	51,394,345	39,268,427	122,837,687	327%	8,786	62%
	2026	15,273,962	57,616,673	44,512,000	139,073,152	377%	8,509	68%
	2027	14,783,718	64,448,690	50,230,777	156,822,066	436%	8,217	74%
	2028	14,264,084	72,091,378	56,516,639	176,368,338	505%	7,907	80%
	2029	13,712,437	80,074,346	63,349,958	197,541,877	584%	7,580	87%
	2030	13,129,613	87,923,672	70,591,997	219,826,236	670%	7,236	95%
	2031	12,517,040	95,515,551	78,085,008	242,727,800	763%	6,877	102%
	2032	11,877,142	102,653,272	85,668,066	265,705,194	864%	6,504	110%
	2033	11,213,298	109,219,838	93,183,108	288,246,685	974%	6,120	118%
	2034	10,529,674	115,111,433	100,470,380	309,885,799	1,093%	5,726	125%
	2035	9,831,324	119,883,360	107,310,956	329,914,482	1,219%	5,327	133%
	2036	9,123,843	123,308,834	113,475,392	347,611,122	1,352%	4,926	141%
	2037	8,413,373	125,253,107	118,750,835	362,317,351	1,489%	4,525	148%
	2038	7,706,465	125,609,530	122,942,389	373,449,779	1,630%	4,129	156%
	2039	7,009,709	124,485,083	125,910,670	380,663,111	1,776%	3,741	162%
	2040	6,329,982	122,009,755	127,579,250	383,814,739	1,927%	3,366	169%
	2041	5,673,351	118,312,152	127,922,067	382,916,473	2,085%	3,005	175%
	2042	5,045,340	113,407,568	126,934,996	378,000,017	2,248%	2,663	180%
	2043	4,451,299	107,329,481	124,625,325	369,124,397	2,411%	2,342	185%
	2044	3,895,280	100,479,437	121,080,247	356,670,977	2,580%	2,043	189%
	2045	3,380,493	93,224,445	116,465,268	341,235,614	2,758%	1,767	193%
	2046	2,909,304	85,778,801	110,969,603	323,453,297	2,948%	1,517	197%
	2047	2,482,499	78,139,906	104,764,064	303,796,578	3,148%	1,292	200%
	2048	2,100,356	70,305,134	97,976,868	282,615,321	3,347%	1,091	202%
	2049	1,762,061	62,575,616	90,769,863	260,409,964	3,551%	914	205%
	2050	1,465,894	55,304,409	83,349,065	237,842,794	3,773%	760	206%
	2051	1,209,023	48,609,681	75,911,444	215,510,837	4,021%	626	208%
	2052-2056	3,330,218	158,835,728	275,253,810	770,636,941	4,770%	1,744	213%
	2057-2061	994,495	66,618,760	138,952,305	379,741,163	6,699%	540	214%
	2062-2066	249,973	23,632,233	59,907,362	159,907,236	9,454%	140	215%
	2067-2071	52,543	6,687,226	22,087,810	57,295,718	12,727%	29	215%
	2072-2076	8,274	1,325,337	6,787,521	16,891,360	16,018%	4	215%

[1] Actual earned premium increases from the history to projection because of differences in the treatment of waiver of premium. Historical data reduced earned premium for waiver, whereas projections treat waiver as an increase to claims with no impact on premium. The difference in the treatment of waiver has an immaterial impact on the lifetime loss ratio.

[2] Incurred Claims are discounted to the year of incurral, whereas Paid Claims and Claim Reserves are calendar year values that are not discounted to the date of incurral.



**Attachment 11B**  
**Massachusetts Mutual Life Insurance Company**  
**Actual and Projected Experience by Calendar Year**  
**Nationwide Experience - After Requested Rate Increase**  
**Lifetime-Pay Policy Forms Issued Prior to October 1, 2003 with a Lifetime Benefit Period and Auto Inflation**

	Calendar Year	Actual or Projected Experience using Current Assumptions						Cumulative LR with Interest
		A Earned Premium <sup>[1]</sup>	B Incurred Claims <sup>[2]</sup>	C Paid Claims <sup>[2]</sup>	D Claim Reserves <sup>[2]</sup>	E = B / A Incurred Loss Ratio	F End of Year Lives	G Actual (Column E) with Max. Val. Interest
Historical Experience	2000	269,173	0	0	0	0%	797	0%
	2001	3,796,566	45,175	0	45,959	1%	3,753	1%
	2002	10,553,534	18,460	38,876	27,323	0%	8,464	0%
	2003	19,730,899	651,265	63,951	627,500	3%	12,564	2%
	2004	21,741,072	462,448	140,480	970,774	2%	12,270	2%
	2005	21,073,127	3,011,036	319,040	3,737,293	14%	12,065	5%
	2006	20,719,548	1,199,669	663,161	4,373,445	6%	11,912	5%
	2007	20,418,612	3,310,912	825,127	7,007,625	16%	11,766	7%
	2008	20,109,517	2,314,434	1,210,391	8,294,328	12%	11,625	8%
	2009	19,727,812	6,507,183	1,953,238	13,168,432	33%	11,443	10%
	2010	19,421,880	7,756,601	2,665,306	18,690,932	40%	11,338	13%
	2011	19,151,889	5,611,008	3,656,262	21,141,916	29%	11,237	14%
	2012	18,889,113	10,046,799	4,299,552	27,520,438	53%	11,128	17%
	2013	18,683,190	6,450,083	5,159,383	29,512,832	35%	11,032	18%
	2014	18,390,236	10,872,709	6,322,427	35,054,845	59%	10,927	20%
	2015	18,074,420	15,877,378	7,659,843	44,436,407	88%	10,802	24%
	2016	17,817,082	13,276,473	9,540,099	43,343,271	75%	10,697	26%
Projected Future Experience (60 Years)	2017	18,597,288	16,206,303	11,185,237	40,245,934	87%	10,530	29%
	2018	18,313,453	19,217,263	12,086,637	46,275,281	105%	10,354	31%
	2019	22,056,720	20,232,264	15,319,473	51,535,657	92%	9,358	34%
	2020	25,975,189	20,866,752	17,749,851	55,908,703	80%	9,175	36%
	2021	25,471,187	24,079,694	19,677,202	61,698,953	95%	8,980	39%
	2022	24,934,699	27,581,936	22,017,973	68,811,896	111%	8,775	41%
	2023	24,364,399	31,417,699	24,763,937	77,204,591	129%	8,558	44%
	2024	23,759,457	35,622,779	27,912,189	86,872,679	150%	8,329	47%
	2025	23,118,297	40,231,895	31,453,737	97,856,038	174%	8,087	51%
	2026	22,439,228	45,052,805	35,362,526	110,025,714	201%	7,832	55%
	2027	21,721,101	50,340,566	39,670,702	123,477,853	232%	7,562	59%
	2028	20,959,774	56,251,851	44,444,380	138,403,544	268%	7,277	63%
	2029	20,151,353	62,419,268	49,663,851	154,643,135	310%	6,976	67%
	2030	19,297,011	68,475,247	55,215,826	171,773,549	355%	6,659	72%
	2031	18,398,791	74,323,946	60,972,007	189,395,166	404%	6,329	77%
	2032	17,460,213	79,814,796	66,802,762	207,077,848	457%	5,985	82%
	2033	16,486,197	84,857,915	72,582,035	224,418,667	515%	5,632	87%
	2034	15,482,839	89,374,900	78,184,026	241,053,702	577%	5,270	93%
	2035	14,457,549	93,022,963	83,438,388	256,434,339	643%	4,902	98%
	2036	13,418,535	95,627,618	88,167,345	270,002,709	713%	4,532	103%
	2037	12,374,832	97,085,599	92,206,376	281,250,729	785%	4,164	108%
	2038	11,336,083	97,315,514	95,405,175	289,729,002	858%	3,799	112%
	2039	10,312,004	96,401,413	97,656,624	295,172,961	935%	3,442	117%
	2040	9,312,729	94,445,778	98,902,617	297,475,811	1,014%	3,097	121%
	2041	8,347,222	91,549,090	99,124,092	296,650,195	1,097%	2,765	125%
	2042	7,423,652	87,723,444	98,318,800	292,723,528	1,182%	2,450	129%
	2043	6,549,898	82,994,858	96,493,175	285,743,737	1,267%	2,154	132%
	2044	5,731,979	77,673,914	93,715,281	276,007,483	1,355%	1,879	135%
	2045	4,974,637	72,044,758	90,113,663	263,977,109	1,448%	1,626	137%
	2046	4,281,374	66,272,854	85,834,513	250,145,121	1,548%	1,396	140%
	2047	3,653,378	60,355,908	81,011,221	234,876,845	1,652%	1,188	142%
	2048	3,091,062	54,291,474	75,742,411	218,442,833	1,756%	1,004	143%
	2049	2,593,233	48,311,752	70,153,174	201,229,469	1,863%	841	145%
	2050	2,157,386	42,688,979	64,402,547	183,747,763	1,979%	699	146%
	2051	1,779,361	37,513,894	58,642,412	166,458,024	2,108%	576	147%
	2052-2056	4,901,239	122,518,418	212,518,225	594,904,940	2,500%	1,605	150%
	2057-2061	1,463,654	51,346,409	107,191,025	292,900,493	3,508%	497	151%
	2062-2066	367,909	18,204,526	46,183,027	123,258,949	4,948%	129	152%
	2067-2071	77,338	5,149,370	17,019,290	44,143,764	6,658%	27	152%
	2072-2076	12,179	1,020,286	5,228,213	13,009,915	8,377%	4	152%

[1] Actual earned premium increases from the history to projection because of differences in the treatment of waiver of premium. Historical data reduced earned premium for waiver, whereas projections treat waiver as an increase to claims with no impact on premium. The difference in the treatment of waiver has an immaterial impact on the lifetime loss ratio.

[2] Incurred Claims are discounted to the year of incurral, whereas Paid Claims and Claim Reserves are calendar year values that are not discounted to the date of incurral.

**Attachment 11C**  
**Massachusetts Mutual Life Insurance Company**  
**Actual and Projected Experience by Calendar Year**  
**Nationwide Experience - After Requested Rate Increase without RBO, CBUL, and Adverse Selection**  
**Lifetime-Pay Policy Forms Issued Prior to October 1, 2003 with a Lifetime Benefit Period and Auto Inflation**

	Calendar Year	Actual or Projected Experience using Current Assumptions						Cumulative LR with Interest
		A Earned Premium <sup>[1]</sup>	B Incurred Claims <sup>[2]</sup>	C Paid Claims <sup>[2]</sup>	D Claim Reserves <sup>[2]</sup>	E = B / A Incurred Loss Ratio	F End of Year Lives	G Actual (Column E) with Max. Val. Interest
Historical Experience	2000	269,173	0	0	0	0%	797	0%
	2001	3,796,566	45,175	0	45,959	1%	3,753	1%
	2002	10,553,534	18,460	38,876	27,323	0%	8,464	0%
	2003	19,730,899	651,265	63,951	627,500	3%	12,564	2%
	2004	21,741,072	462,448	140,480	970,774	2%	12,270	2%
	2005	21,073,127	3,011,036	319,040	3,737,293	14%	12,065	5%
	2006	20,719,548	1,199,669	663,161	4,373,445	6%	11,912	5%
	2007	20,418,612	3,310,912	825,127	7,007,625	16%	11,766	7%
	2008	20,109,517	2,314,434	1,210,391	8,294,328	12%	11,625	8%
	2009	19,727,812	6,507,183	1,953,238	13,168,432	33%	11,443	10%
	2010	19,421,880	7,756,601	2,665,306	18,690,932	40%	11,338	13%
	2011	19,151,889	5,611,008	3,656,262	21,141,916	29%	11,237	14%
	2012	18,889,113	10,046,799	4,299,552	27,520,438	53%	11,128	17%
	2013	18,683,190	6,450,083	5,159,383	29,512,832	35%	11,032	18%
	2014	18,390,236	10,872,709	6,322,427	35,054,845	59%	10,927	20%
	2015	18,074,420	15,877,378	7,659,843	44,436,407	88%	10,802	24%
	2016	17,817,082	13,276,473	9,540,099	43,343,271	75%	10,697	26%
Projected Future Experience (60 Years)	2017	18,597,288	16,206,303	11,185,237	40,245,934	87%	10,530	29%
	2018	18,313,453	19,217,263	12,086,637	46,275,281	105%	10,354	31%
	2019	26,547,509	22,874,286	15,842,328	53,673,143	86%	10,166	34%
	2020	35,175,358	26,992,321	19,568,830	62,496,139	77%	9,967	37%
	2021	34,495,204	31,158,132	22,832,274	72,446,853	90%	9,756	40%
	2022	33,771,305	35,701,714	26,467,466	83,557,424	106%	9,533	43%
	2023	33,001,849	40,680,967	30,498,339	95,895,526	123%	9,297	46%
	2024	32,185,687	46,142,048	34,951,000	109,550,854	143%	9,049	50%
	2025	31,320,648	52,130,999	39,840,874	124,646,078	166%	8,786	54%
	2026	30,404,375	58,397,381	45,149,583	141,069,588	192%	8,509	58%
	2027	29,435,251	65,273,610	50,929,459	158,993,690	222%	8,217	63%
	2028	28,407,573	72,962,392	57,273,515	178,706,889	257%	7,907	68%
	2029	27,315,986	80,987,838	64,161,895	200,038,405	296%	7,580	73%
	2030	26,161,974	88,871,286	71,454,590	222,467,539	340%	7,236	78%
	2031	24,948,206	96,487,769	78,992,521	245,496,501	387%	6,877	84%
	2032	23,679,358	103,640,031	86,613,718	268,580,158	438%	6,504	90%
	2033	22,362,020	110,211,146	94,159,285	291,203,858	493%	6,120	96%
	2034	21,004,393	116,098,144	101,468,876	312,899,611	553%	5,726	102%
	2035	19,616,486	120,854,664	108,322,787	332,956,907	616%	5,327	107%
	2036	18,209,399	124,253,557	114,490,860	350,651,976	682%	4,926	113%
	2037	16,795,390	126,160,606	119,759,823	365,325,217	751%	4,525	119%
	2038	15,387,555	126,469,928	123,934,605	376,392,938	822%	4,129	124%
	2039	13,999,130	125,290,955	126,876,173	383,511,684	895%	3,741	129%
	2040	12,643,892	122,756,463	128,509,052	386,542,594	971%	3,366	134%
	2041	11,334,088	118,997,101	128,808,481	385,502,074	1,050%	3,005	138%
	2042	10,080,884	114,028,775	127,771,611	380,425,847	1,131%	2,663	142%
	2043	8,895,006	107,885,643	125,406,904	371,376,545	1,213%	2,342	146%
	2044	7,784,724	100,971,705	121,802,990	358,740,266	1,297%	2,043	149%
	2045	6,756,525	93,656,274	117,127,079	343,118,313	1,386%	1,767	152%
	2046	5,815,197	86,154,621	111,570,012	325,150,593	1,482%	1,517	155%
	2047	4,962,413	78,463,806	105,303,868	305,313,037	1,581%	1,292	157%
	2048	4,198,749	70,580,734	98,457,738	283,957,601	1,681%	1,091	159%
	2049	3,522,593	62,807,433	91,194,287	261,586,947	1,783%	914	161%
	2050	2,930,597	55,497,944	83,720,373	238,865,781	1,894%	760	162%
	2051	2,417,124	48,770,349	76,233,619	216,392,853	2,018%	626	164%
	2052-2056	6,658,063	159,283,305	276,276,502	773,389,496	2,392%	1,744	167%
	2057-2061	1,988,314	66,756,233	139,355,143	380,791,820	3,357%	540	168%
	2062-2066	499,804	23,668,517	60,042,678	160,250,284	4,736%	140	169%
	2067-2071	105,070	6,695,043	22,127,315	57,392,953	6,372%	29	169%
	2072-2076	16,548	1,326,563	6,797,472	16,914,922	8,016%	4	169%

[1] Actual earned premium increases from the history to projection because of differences in the treatment of waiver of premium. Historical data reduced earned premium for waiver, whereas projections treat waiver as an increase to claims with no impact on premium. The difference in the treatment of waiver has an immaterial impact on the lifetime loss ratio.

[2] Incurred Claims are discounted to the year of incurral, whereas Paid Claims and Claim Reserves are calendar year values that are not discounted to the date of incurral.

**Attachment 11D**  
**Massachusetts Mutual Life Insurance Company**  
**Actual and Projected Experience by Calendar Year**  
**Nationwide Experience Restated to Proposed Increase From Inception**  
**Lifetime-Pay Policy Forms Issued Prior to October 1, 2003 with a Lifetime Benefit Period and Auto Inflation**

	Calendar Year	Actual or Projected Experience using Current Assumptions						Cumulative LR with Interest
		A Earned Premium <sup>[1]</sup>	B Incurred Claims <sup>[2]</sup>	C Paid Claims <sup>[2]</sup>	D Claim Reserves <sup>[2]</sup>	E = B / A Incurred Loss Ratio	F End of Year Lives	G Actual (Column E) with Max. Val. Interest
Historical Experience	2000	533,842	0	0	0	0%	797	0%
	2001	7,527,677	45,175	0	45,959	1%	3,753	1%
	2002	20,958,770	18,460	38,876	27,323	0%	8,464	0%
	2003	39,228,547	651,265	63,951	627,500	2%	12,564	1%
	2004	43,237,738	462,448	140,480	970,774	1%	12,270	1%
	2005	41,907,205	3,011,036	319,040	3,737,293	7%	12,065	3%
	2006	41,206,241	1,199,669	663,161	4,373,445	3%	11,912	3%
	2007	40,606,081	3,310,912	825,127	7,007,625	8%	11,766	4%
	2008	39,988,901	2,314,434	1,210,391	8,294,328	6%	11,625	4%
	2009	39,229,872	6,507,183	1,953,238	13,168,432	17%	11,443	5%
	2010	38,619,541	7,756,601	2,665,306	18,690,932	20%	11,338	7%
	2011	38,081,111	5,611,008	3,656,262	21,141,916	15%	11,237	7%
	2012	37,561,079	10,046,799	4,299,552	27,520,438	27%	11,128	9%
	2013	37,153,579	6,450,083	5,159,383	29,512,832	17%	11,032	9%
	2014	36,575,044	10,872,709	6,322,427	35,054,845	30%	10,927	10%
	2015	35,953,050	15,877,378	7,659,843	44,436,407	44%	10,802	12%
	2016	35,442,221	13,276,473	9,540,099	43,343,271	37%	10,697	13%
Projected Future Experience (60 Years)	2017	36,973,069	16,566,943	11,226,633	40,537,566	45%	10,530	14%
	2018	36,411,535	19,622,406	12,221,516	46,825,463	54%	10,354	16%
	2019	35,813,427	23,102,853	16,021,596	54,276,699	65%	10,166	18%
	2020	35,175,358	26,992,321	19,725,358	62,953,639	77%	9,967	19%
	2021	34,495,204	31,158,132	22,953,473	72,791,090	90%	9,756	22%
	2022	33,771,305	35,701,714	26,560,897	83,814,203	106%	9,533	24%
	2023	33,001,849	40,680,967	30,570,077	96,085,023	123%	9,297	26%
	2024	32,185,687	46,142,048	35,005,797	109,688,842	143%	9,049	29%
	2025	31,320,648	52,130,999	39,882,423	124,744,911	166%	8,786	32%
	2026	30,404,375	58,397,381	45,180,635	141,139,083	192%	8,509	34%
	2027	29,435,251	65,273,610	50,952,123	159,041,727	222%	8,217	38%
	2028	28,407,573	72,962,392	57,289,572	178,739,702	257%	7,907	41%
	2029	27,315,986	80,987,838	64,172,963	200,060,719	296%	7,580	44%
	2030	26,161,974	88,871,286	71,462,083	222,482,747	340%	7,236	48%
	2031	24,948,206	96,487,769	78,997,568	245,506,927	387%	6,877	52%
	2032	23,679,358	103,640,031	86,617,137	268,587,346	438%	6,504	56%
	2033	22,362,020	110,211,146	94,161,620	291,208,835	493%	6,120	60%
	2034	21,004,393	116,098,144	101,470,482	312,903,068	553%	5,726	64%
	2035	19,616,486	120,854,664	108,323,896	332,959,316	616%	5,327	68%
	2036	18,209,399	124,253,557	114,491,629	350,653,658	682%	4,926	72%
	2037	16,795,390	126,160,606	119,760,359	365,326,393	751%	4,525	75%
	2038	15,387,555	126,469,928	123,934,981	376,393,759	822%	4,129	79%
	2039	13,999,130	125,290,955	126,876,436	383,512,256	895%	3,741	82%
	2040	12,643,892	122,756,463	128,509,237	386,542,989	971%	3,366	86%
	2041	11,334,088	118,997,101	128,808,612	385,502,344	1,050%	3,005	89%
	2042	10,080,884	114,028,775	127,771,704	380,426,030	1,131%	2,663	91%
	2043	8,895,006	107,885,643	125,406,971	371,376,664	1,213%	2,342	94%
	2044	7,784,724	100,971,705	121,803,037	358,740,339	1,297%	2,043	96%
	2045	6,756,525	93,656,274	117,127,113	343,118,354	1,386%	1,767	98%
	2046	5,815,197	86,154,621	111,570,036	325,150,609	1,482%	1,517	100%
	2047	4,962,413	78,463,806	105,303,881	305,313,041	1,581%	1,292	101%
	2048	4,198,749	70,580,734	98,457,742	283,957,601	1,681%	1,091	103%
	2049	3,522,593	62,807,433	91,194,287	261,586,947	1,783%	914	104%
	2050	2,930,597	55,497,944	83,720,373	238,865,781	1,894%	760	105%
	2051	2,417,124	48,770,349	76,233,619	216,392,853	2,018%	626	105%
	2052-2056	6,658,063	159,283,305	276,276,502	773,389,496	2,392%	1,744	108%
	2057-2061	1,988,314	66,756,233	139,355,143	380,791,820	3,357%	540	109%
	2062-2066	499,804	23,668,517	60,042,678	160,250,284	4,736%	140	109%
	2067-2071	105,070	6,695,043	22,127,315	57,392,953	6,372%	29	109%
	2072-2076	16,548	1,326,563	6,797,472	16,914,922	8,016%	4	109%

[1] Actual earned premium increases from the history to projection because of differences in the treatment of waiver of premium. Historical data reduced earned premium for waiver, whereas projections treat waiver as an increase to claims with no impact on premium. The difference in the treatment of waiver has an immaterial impact on the lifetime loss ratio.

[2] Incurred Claims are discounted to the year of incurral, whereas Paid Claims and Claim Reserves are calendar year values that are not discounted to the date of incurral.

**Attachment 11E**  
**Massachusetts Mutual Life Insurance Company**  
**Projected Experience by Calendar Year**  
**Nationwide Expected Experience**

**Lifetime-Pay Policy Forms Issued Prior to October 1, 2003 with a Lifetime Benefit Period and Auto Inflation**

	Calendar Year	Projected Experience using Pricing Assumptions						Cumulative LR with Interest
		A  Earned Premium	B  Incurred Claims <sup>[1]</sup>	C  Paid Claims <sup>[1]</sup>	D  Claim Reserves <sup>[1]</sup>	E = B / A  Incurred Loss Ratio	F  End of Year Lives	G  Actual (Column E) with Max. Val. Interest
Projected Experience	2000	269,013	4,242	524	3,791	2%	800	2%
	2001	3,833,519	59,149	8,861	55,314	2%	3,781	2%
	2002	10,539,737	206,332	47,238	221,582	2%	8,366	2%
	2003	19,419,696	532,152	153,829	625,161	3%	12,169	2%
	2004	20,648,548	1,023,379	375,942	1,338,143	5%	11,347	3%
	2005	19,158,110	1,711,682	748,040	2,439,432	9%	10,721	5%
	2006	18,154,372	2,545,587	1,294,338	3,938,623	14%	10,210	6%
	2007	17,309,108	3,382,475	1,996,343	5,717,755	20%	9,769	8%
	2008	16,547,089	4,113,881	2,787,071	7,602,349	25%	9,355	10%
	2009	15,819,257	4,628,482	3,572,447	9,376,101	29%	8,950	12%
	2010	15,113,889	5,104,710	4,284,284	11,050,390	34%	8,552	14%
	2011	14,427,767	5,632,099	4,932,473	12,709,427	39%	8,161	15%
	2012	13,756,622	6,211,328	5,548,358	14,408,976	45%	7,776	17%
	2013	13,095,625	6,847,546	6,164,347	16,190,481	52%	7,394	19%
	2014	12,443,684	7,541,960	6,808,923	18,082,445	61%	7,018	21%
	2015	11,798,842	8,293,387	7,509,710	20,103,312	70%	6,646	23%
	2016	11,153,722	9,101,815	8,281,409	22,266,436	82%	6,271	25%
	2017	10,498,399	9,922,298	9,103,127	24,541,973	95%	5,889	27%
	2018	9,829,260	10,732,794	9,960,945	26,890,841	109%	5,501	29%
	2019	9,156,987	11,498,956	10,823,507	29,256,485	126%	5,119	31%
	2020	8,498,494	12,245,650	11,676,850	31,623,069	144%	4,749	33%
	2021	7,859,594	12,978,439	12,517,378	33,983,918	165%	4,390	35%
	2022	7,241,084	13,678,408	13,338,199	36,317,292	189%	4,045	38%
	2023	6,644,044	14,319,246	14,128,152	38,584,976	216%	3,712	40%
	2024	6,069,775	14,877,764	14,870,320	40,740,325	245%	3,393	42%
	2025	5,519,593	15,344,389	15,547,941	42,742,066	278%	3,088	44%
	2026	4,994,811	15,720,250	16,145,690	44,561,471	315%	2,798	47%
	2027	4,496,690	15,991,745	16,651,569	46,165,155	356%	2,523	49%
	2028	4,026,471	16,129,660	17,050,915	47,502,944	401%	2,264	51%
	2029	3,585,247	16,126,956	17,326,385	48,533,069	450%	2,021	53%
	2030	3,173,797	15,991,725	17,466,704	49,232,347	504%	1,794	55%
	2031	2,792,581	15,732,326	17,467,556	49,590,382	563%	1,584	57%
	2032	2,441,788	15,350,481	17,328,832	49,599,654	629%	1,390	58%
	2033	2,121,320	14,849,206	17,051,409	49,256,232	700%	1,213	60%
	2034	1,830,770	14,233,944	16,639,224	48,560,398	777%	1,052	61%
	2035	1,569,389	13,523,364	16,099,811	47,526,766	862%	906	63%
	2036	1,336,115	12,736,257	15,444,662	46,180,263	953%	776	64%
	2037	1,129,619	11,893,641	14,689,655	44,555,003	1,053%	660	65%
	2038	948,354	11,004,563	13,852,059	42,681,332	1,160%	558	66%
	2039	790,597	10,083,757	12,947,291	40,592,569	1,275%	468	67%
	2040	654,467	9,154,595	11,992,910	38,332,231	1,399%	391	67%
	2041	538,000	8,236,571	11,008,913	35,947,582	1,531%	324	68%
	2042	439,206	7,343,690	10,015,715	33,483,833	1,672%	267	69%
	2043	356,116	6,488,098	9,030,558	30,983,513	1,822%	218	69%
	2044	286,811	5,681,866	8,068,490	28,487,549	1,981%	177	69%
	2045	229,473	4,933,299	7,144,323	26,032,600	2,150%	143	70%
	2046	182,421	4,247,164	6,270,535	23,649,649	2,328%	115	70%
	2047	144,122	3,627,026	5,456,752	21,364,928	2,517%	91	70%
	2048	113,188	3,074,301	4,709,427	19,199,645	2,716%	73	70%
	2049	88,383	2,585,970	4,031,391	17,167,578	2,926%	57	71%
	2050	68,634	2,159,770	3,422,705	15,278,184	3,147%	45	71%
	2051	53,024	1,790,915	2,883,359	13,535,694	3,378%	35	71%
	2052-2056	127,540	5,106,148	8,525,112	46,595,469	4,004%	85	71%
	2057-2061	31,651	1,728,125	3,035,021	22,904,522	5,460%	22	71%
	2062-2066	7,545	543,433	976,102	10,461,209	7,203%	5	71%
	2067-2071	1,822	181,602	310,551	4,513,165	9,967%	1	71%
	2072-2076	419	64,179	108,556	1,871,322	15,320%	0	71%

[1] Incurred Claims are discounted to the year of incurrence, whereas Paid Claims and Claim Reserves are calendar year values that are not discounted to the date of incurrence.

**Attachment 11F**  
**Massachusetts Mutual Life Insurance Company**  
**Actual and Projected Experience by Calendar Year**  
**Nationwide Experience - Before Requested Rate Increase**  
**Lifetime-Pay Policy Forms Issued Prior to October 1, 2003 with a Lifetime Benefit Period and Auto Inflation**

	Calendar Year	Actual or Projected Experience using Original Pricing Assumptions						Cumulative LR with Interest
		A Earned Premium <sup>[1]</sup>	B Incurred Claims <sup>[2]</sup>	C Paid Claims <sup>[2][3]</sup>	D Claim Reserves <sup>[2][3]</sup>	E = B / A Incurred Loss Ratio	F End of Year Lives	G Actual (Column E) with Max. Val. Interest
Historical Experience	2000	269,173	0	0	0	0%	797	0%
	2001	3,796,566	45,175	0	45,959	1%	3,753	1%
	2002	10,553,534	18,460	38,876	27,323	0%	8,464	0%
	2003	19,730,899	651,265	63,951	627,500	3%	12,564	2%
	2004	21,741,072	462,448	140,480	970,774	2%	12,270	2%
	2005	21,073,127	3,011,036	319,040	3,737,293	14%	12,065	5%
	2006	20,719,548	1,199,669	663,161	4,373,445	6%	11,912	5%
	2007	20,418,612	3,310,912	825,127	7,007,625	16%	11,766	7%
	2008	20,109,517	2,314,434	1,210,391	8,294,328	12%	11,625	8%
	2009	19,727,812	6,507,183	1,953,238	13,168,432	33%	11,443	10%
	2010	19,421,880	7,756,601	2,665,306	18,690,932	40%	11,338	13%
	2011	19,151,889	5,611,008	3,656,262	21,141,916	29%	11,237	14%
	2012	18,889,113	10,046,799	4,299,552	27,520,438	53%	11,128	17%
	2013	18,683,190	6,450,083	5,159,383	29,512,832	35%	11,032	18%
	2014	18,390,236	10,872,709	6,322,427	35,054,845	59%	10,927	20%
	2015	18,074,420	15,877,378	7,659,843	44,436,407	88%	10,802	24%
	2016	17,817,082	13,276,473	9,540,099	43,343,271	75%	10,697	26%
Projected Future Experience (60 Years)	2017	17,946,669	18,847,511	0	0	105%	10,035	29%
	2018	16,784,495	20,395,936	0	0	122%	9,360	32%
	2019	15,615,483	21,863,676	0	0	140%	8,696	36%
	2020	14,469,309	23,286,809	0	0	161%	8,052	39%
	2021	13,356,878	24,675,014	0	0	185%	7,430	42%
	2022	12,280,019	25,990,737	0	0	212%	6,830	46%
	2023	11,241,033	27,183,861	0	0	242%	6,253	49%
	2024	10,242,578	28,205,234	0	0	275%	5,700	52%
	2025	9,287,285	29,038,375	0	0	313%	5,173	56%
	2026	8,377,674	29,683,832	0	0	354%	4,672	59%
	2027	7,516,096	30,120,239	0	0	401%	4,198	62%
	2028	6,704,786	30,291,162	0	0	452%	3,753	65%
	2029	5,945,629	30,192,644	0	0	508%	3,336	68%
	2030	5,239,895	29,836,709	0	0	569%	2,948	70%
	2031	4,588,282	29,240,592	0	0	637%	2,590	73%
	2032	3,990,965	28,410,953	0	0	712%	2,262	75%
	2033	3,447,574	27,357,845	0	0	794%	1,962	78%
	2034	2,957,156	26,096,229	0	0	882%	1,691	80%
	2035	2,518,163	24,660,090	0	0	979%	1,448	81%
	2036	2,128,490	23,090,302	0	0	1,085%	1,231	83%
	2037	1,785,569	21,426,285	0	0	1,200%	1,039	85%
	2038	1,486,464	19,687,929	0	0	1,324%	871	86%
	2039	1,227,948	17,905,371	0	0	1,458%	725	87%
	2040	1,006,553	16,121,589	0	0	1,602%	599	88%
	2041	818,685	14,373,517	0	0	1,756%	491	89%
	2042	660,736	12,690,894	0	0	1,921%	400	90%
	2043	529,161	11,095,466	0	0	2,097%	323	90%
	2044	420,547	9,607,713	0	0	2,285%	259	91%
	2045	331,689	8,241,029	0	0	2,485%	207	91%
	2046	259,646	7,002,596	0	0	2,697%	163	92%
	2047	201,763	5,896,304	0	0	2,922%	128	92%
	2048	155,660	4,921,995	0	0	3,162%	100	92%
	2049	119,240	4,073,542	0	0	3,416%	77	92%
	2050	90,702	3,342,933	0	0	3,686%	59	92%
	2051	68,528	2,720,198	0	0	3,969%	45	92%
	2052-2056	154,457	7,320,781	0	0	4,740%	104	93%
	2057-2061	31,839	2,108,197	0	0	6,621%	22	93%
	2062-2066	5,372	479,479	0	0	8,925%	4	93%
	2067-2071	669	77,169	0	0	11,527%	0	93%
	2072-2076	47	6,253	0	0	13,376%	0	93%

[1] Actual earned premium increases from the history to projection because of differences in the treatment of waiver of premium. Historical data reduced earned premium for waiver, whereas projections treat waiver as an increase to claims with no impact on premium. The difference in the treatment of waiver has an immaterial impact on the lifetime loss ratio.

[2] Incurred Claims are discounted to the year of incurral, whereas Paid Claims and Claim Reserves are calendar year values that are not discounted to the date of incurral.

[3] Projected values for paid claims and claim reserves are not readily available in the model used to project original pricing assumptions based on actual historical experience.

**Attachment 12A**  
**Massachusetts Mutual Life Insurance Company**  
**Actual and Projected Experience by Calendar Year**  
**Nationwide Experience - Before Requested Rate Increase**  
**Lifetime-Pay Policy Forms Issued On or After October 1, 2003 with Non-Lifetime Benefit Periods and No Inflation**

	Calendar Year	Actual or Projected Experience using Current Assumptions						Cumulative LR with Interest
		A Earned Premium <sup>[1]</sup>	B Incurred Claims <sup>[2]</sup>	C Paid Claims <sup>[2]</sup>	D Claim Reserves <sup>[2]</sup>	E = B / A Incurred Loss Ratio	F End of Year Lives	G Actual (Column E) with Max. Val. Interest
Historical Experience	2000	0	0	0	0	0%	0	0%
	2001	0	0	0	0	0%	0	0%
	2002	0	0	0	0	0%	0	0%
	2003	27,672	0	0	0	0%	105	0%
	2004	434,179	0	0	0	0%	353	0%
	2005	1,007,429	0	0	0	0%	664	0%
	2006	1,507,571	98	0	99	0%	886	0%
	2007	1,975,556	388,752	12,644	383,169	20%	1,111	7%
	2008	2,447,384	363,499	101,472	659,881	15%	1,343	10%
	2009	2,921,143	299,327	291,901	688,927	10%	1,557	10%
	2010	3,610,523	16,903	237,702	484,428	0%	1,875	8%
	2011	4,483,615	332,607	202,551	634,896	7%	2,429	8%
	2012	5,806,207	1,038,392	390,199	1,320,251	18%	2,958	10%
	2013	6,511,603	904,878	450,391	1,821,078	14%	3,224	11%
	2014	6,554,058	1,219,379	763,245	2,342,978	19%	3,149	12%
	2015	6,319,043	738,234	932,900	2,237,655	12%	3,072	12%
	2016	6,130,225	505,840	946,258	1,227,488	8%	3,009	11%
Projected Future Experience (60 Years)	2017	6,132,256	1,767,952	737,246	1,706,962	29%	2,947	13%
	2018	5,978,641	2,001,083	1,271,402	2,276,611	33%	2,887	15%
	2019	5,825,819	2,252,648	1,792,252	2,721,258	39%	2,828	16%
	2020	5,670,975	2,514,036	2,204,654	3,121,470	44%	2,769	18%
	2021	5,511,924	2,780,679	2,491,044	3,513,505	50%	2,707	20%
	2022	5,346,552	3,045,305	2,774,854	3,897,747	57%	2,642	21%
	2023	5,173,832	3,301,189	3,047,709	4,276,125	64%	2,574	23%
	2024	4,993,877	3,551,344	3,314,198	4,649,074	71%	2,503	25%
	2025	4,807,209	3,794,023	3,574,507	5,015,074	79%	2,429	27%
	2026	4,614,552	4,033,434	3,829,094	5,376,401	87%	2,351	29%
	2027	4,416,550	4,285,188	4,083,025	5,746,188	97%	2,270	30%
	2028	4,213,640	4,552,440	4,343,415	6,133,888	108%	2,186	32%
	2029	4,006,128	4,809,869	4,607,393	6,526,232	120%	2,099	34%
	2030	3,795,235	5,053,801	4,868,420	6,912,521	133%	2,008	36%
	2031	3,582,198	5,280,498	5,120,437	7,284,125	147%	1,915	38%
	2032	3,368,190	5,486,614	5,357,881	7,634,425	163%	1,820	40%
	2033	3,154,474	5,667,501	5,575,852	7,956,856	180%	1,724	42%
	2034	2,941,972	5,819,747	5,770,093	8,245,527	198%	1,626	44%
	2035	2,731,821	5,934,321	5,935,013	8,490,849	217%	1,527	45%
	2036	2,524,926	5,999,785	6,063,237	8,678,801	238%	1,429	47%
	2037	2,322,381	6,025,890	6,151,665	8,808,145	259%	1,330	49%
	2038	2,125,250	6,007,807	6,197,552	8,875,450	283%	1,233	51%
	2039	1,934,618	5,945,881	6,199,062	8,879,412	307%	1,137	52%
	2040	1,751,464	5,827,463	6,151,976	8,810,056	333%	1,043	54%
	2041	1,576,721	5,657,665	6,054,359	8,664,370	359%	953	55%
	2042	1,411,336	5,439,559	5,905,960	8,442,665	385%	866	57%
	2043	1,256,065	5,176,968	5,707,917	8,148,010	412%	782	58%
	2044	1,111,396	4,887,428	5,467,529	7,794,068	440%	704	59%
	2045	977,519	4,572,446	5,191,975	7,389,092	468%	630	60%
	2046	854,707	4,240,206	4,888,217	6,942,844	496%	560	61%
	2047	742,956	3,894,904	4,562,410	6,463,367	524%	496	62%
	2048	642,131	3,548,057	4,221,248	5,963,870	553%	438	62%
	2049	551,820	3,209,368	3,873,557	5,458,832	582%	384	63%
	2050	471,633	2,879,146	3,526,252	4,956,386	610%	335	64%
	2051	400,870	2,561,405	3,184,926	4,463,295	639%	292	64%
	2052-2056	1,227,151	8,741,236	11,311,096	15,692,389	712%	957	66%
	2057-2061	477,684	3,976,070	5,519,615	7,489,969	832%	436	66%
	2062-2066	171,512	1,551,297	2,284,629	3,018,363	904%	194	66%
	2067-2071	60,463	574,497	857,519	1,097,773	950%	87	66%
	2072-2076	22,249	223,964	323,617	401,344	1,007%	38	66%

[1] Actual earned premium increases from the history to projection because of differences in the treatment of waiver of premium. Historical data reduced earned premium for waiver, whereas projections treat waiver as an increase to claims with no impact on premium. The difference in the treatment of waiver has an immaterial impact on the lifetime loss ratio.

[2] Incurred Claims are discounted to the year of incurral, whereas Paid Claims and Claim Reserves are calendar year values that are not discounted to the date of incurral.

**Attachment 12B**  
**Massachusetts Mutual Life Insurance Company**  
**Actual and Projected Experience by Calendar Year**  
**Nationwide Experience - After Requested Rate Increase**  
**Lifetime-Pay Policy Forms Issued On or After October 1, 2003 with Non-Lifetime Benefit Periods and No Inflation**

	Calendar Year	Actual or Projected Experience using Current Assumptions						Cumulative LR with Interest
		A Earned Premium <sup>[1]</sup>	B Incurred Claims <sup>[2]</sup>	C Paid Claims <sup>[2]</sup>	D Claim Reserves <sup>[2]</sup>	E = B / A Incurred Loss Ratio	F End of Year Lives	G Actual (Column E) with Max. Val. Interest
Historical Experience	2000	0	0	0	0	0%	0	0%
	2001	0	0	0	0	0%	0	0%
	2002	0	0	0	0	0%	0	0%
	2003	27,672	0	0	0	0%	105	0%
	2004	434,179	0	0	0	0%	353	0%
	2005	1,007,429	0	0	0	0%	664	0%
	2006	1,507,571	98	0	99	0%	886	0%
	2007	1,975,556	388,752	12,644	383,169	20%	1,111	7%
	2008	2,447,384	363,499	101,472	659,881	15%	1,343	10%
	2009	2,921,143	299,327	291,901	688,927	10%	1,557	10%
	2010	3,610,523	16,903	237,702	484,428	0%	1,875	8%
	2011	4,483,615	332,607	202,551	634,896	7%	2,429	8%
	2012	5,806,207	1,038,392	390,199	1,320,251	18%	2,958	10%
	2013	6,511,603	904,878	450,391	1,821,078	14%	3,224	11%
	2014	6,554,058	1,219,379	763,245	2,342,978	19%	3,149	12%
	2015	6,319,043	738,234	932,900	2,237,655	12%	3,072	12%
	2016	6,130,225	505,840	946,258	1,227,488	8%	3,009	11%
Projected Future Experience (60 Years)	2017	6,132,256	1,767,952	737,246	1,706,962	29%	2,947	13%
	2018	5,978,641	2,001,083	1,271,402	2,276,611	33%	2,887	15%
	2019	6,454,002	2,175,749	1,767,898	2,668,660	34%	2,749	16%
	2020	6,877,672	2,349,091	2,125,688	2,979,119	34%	2,691	17%
	2021	6,682,767	2,599,423	2,362,077	3,313,251	39%	2,631	19%
	2022	6,480,059	2,848,149	2,609,109	3,659,188	44%	2,568	20%
	2023	6,268,452	3,088,763	2,856,784	4,008,241	49%	2,503	21%
	2024	6,048,185	3,324,007	3,103,340	4,356,119	55%	2,434	23%
	2025	5,819,950	3,551,981	3,346,424	4,698,878	61%	2,362	24%
	2026	5,584,696	3,776,481	3,585,160	5,037,242	68%	2,286	26%
	2027	5,343,258	4,012,217	3,823,209	5,383,254	75%	2,208	27%
	2028	5,096,190	4,262,269	4,067,093	5,745,774	84%	2,126	29%
	2029	4,843,903	4,502,593	4,314,069	6,112,103	93%	2,041	30%
	2030	4,587,870	4,729,665	4,557,906	6,471,961	103%	1,953	32%
	2031	4,329,580	4,939,718	4,792,671	6,816,995	114%	1,863	34%
	2032	4,070,419	5,130,157	5,013,210	7,141,220	126%	1,770	35%
	2033	3,811,872	5,296,504	5,214,980	7,438,532	139%	1,676	37%
	2034	3,554,998	5,435,526	5,393,996	7,703,421	153%	1,581	38%
	2035	3,301,105	5,539,459	5,545,227	7,927,410	168%	1,486	40%
	2036	3,051,240	5,596,923	5,661,765	8,097,208	183%	1,389	41%
	2037	2,806,673	5,617,771	5,740,910	8,212,017	200%	1,294	43%
	2038	2,568,647	5,597,114	5,780,137	8,268,575	218%	1,199	44%
	2039	2,338,423	5,535,905	5,777,868	8,266,113	237%	1,106	46%
	2040	2,117,163	5,422,374	5,730,349	8,195,627	256%	1,015	47%
	2041	1,905,985	5,261,177	5,635,890	8,054,382	276%	927	48%
	2042	1,706,028	5,055,317	5,494,376	7,842,770	296%	842	49%
	2043	1,518,212	4,808,546	5,306,942	7,563,868	317%	761	50%
	2044	1,343,128	4,537,298	5,080,510	7,230,604	338%	685	51%
	2045	1,181,025	4,243,516	4,821,986	6,851,205	359%	613	52%
	2046	1,032,258	3,934,533	4,538,023	6,434,842	381%	545	53%
	2047	896,836	3,614,122	4,234,373	5,988,936	403%	483	53%
	2048	774,635	3,292,677	3,917,158	5,525,487	425%	426	54%
	2049	665,149	2,979,241	3,594,482	5,057,798	448%	374	55%
	2050	567,934	2,674,161	3,272,705	4,593,399	471%	327	55%
	2051	482,156	2,380,819	2,956,917	4,138,301	494%	284	55%
	2052-2056	1,469,692	8,146,701	10,520,815	14,581,301	554%	933	57%
	2057-2061	565,615	3,726,229	5,158,713	6,998,101	659%	426	57%
	2062-2066	200,177	1,460,399	2,145,690	2,835,986	730%	190	57%
	2067-2071	69,503	543,935	809,712	1,037,543	783%	86	57%
	2072-2076	25,232	214,018	308,171	382,429	848%	38	57%

[1] Actual earned premium increases from the history to projection because of differences in the treatment of waiver of premium. Historical data reduced earned premium for waiver, whereas projections treat waiver as an increase to claims with no impact on premium. The difference in the treatment of waiver has an immaterial impact on the lifetime loss ratio.

[2] Incurred Claims are discounted to the year of incurral, whereas Paid Claims and Claim Reserves are calendar year values that are not discounted to the date of incurral.

**Attachment 12C**  
**Massachusetts Mutual Life Insurance Company**  
**Actual and Projected Experience by Calendar Year**  
**Nationwide Experience - After Requested Rate Increase without RBO, CBUL, and Adverse Selection**  
**Lifetime-Pay Policy Forms Issued On or After October 1, 2003 with Non-Lifetime Benefit Periods and No Inflation**

	Calendar Year	Actual or Projected Experience using Current Assumptions						Cumulative LR with Interest
		A Earned Premium <sup>[1]</sup>	B Incurred Claims <sup>[2]</sup>	C Paid Claims <sup>[2]</sup>	D Claim Reserves <sup>[2]</sup>	E = B / A Incurred Loss Ratio	F End of Year Lives	G Actual (Column E) with Max. Val. Interest
Historical Experience	2000	0	0	0	0	0%	0	0%
	2001	0	0	0	0	0%	0	0%
	2002	0	0	0	0	0%	0	0%
	2003	27,672	0	0	0	0%	105	0%
	2004	434,179	0	0	0	0%	353	0%
	2005	1,007,429	0	0	0	0%	664	0%
	2006	1,507,571	98	0	99	0%	886	0%
	2007	1,975,556	388,752	12,644	383,169	20%	1,111	7%
	2008	2,447,384	363,499	101,472	659,881	15%	1,343	10%
	2009	2,921,143	299,327	291,901	688,927	10%	1,557	10%
	2010	3,610,523	16,903	237,702	484,428	0%	1,875	8%
	2011	4,483,615	332,607	202,551	634,896	7%	2,429	8%
	2012	5,806,207	1,038,392	390,199	1,320,251	18%	2,958	10%
	2013	6,511,603	904,878	450,391	1,821,078	14%	3,224	11%
	2014	6,554,058	1,219,379	763,245	2,342,978	19%	3,149	12%
	2015	6,319,043	738,234	932,900	2,237,655	12%	3,072	12%
	2016	6,130,225	505,840	946,258	1,227,488	8%	3,009	11%
Projected Future Experience (60 Years)	2017	6,132,256	1,767,952	737,246	1,706,962	29%	2,947	13%
	2018	5,978,641	2,001,083	1,271,402	2,276,611	33%	2,887	15%
	2019	6,840,372	2,278,593	1,800,396	2,739,081	33%	2,828	16%
	2020	7,612,082	2,569,594	2,230,963	3,169,816	34%	2,769	17%
	2021	7,394,346	2,839,760	2,533,348	3,580,490	38%	2,707	19%
	2022	7,167,860	3,107,283	2,828,096	3,975,707	43%	2,642	20%
	2023	6,931,565	3,365,259	3,107,448	4,360,881	49%	2,574	22%
	2024	6,685,823	3,616,866	3,377,942	4,738,215	54%	2,503	23%
	2025	6,431,454	3,860,390	3,640,674	5,107,113	60%	2,429	25%
	2026	6,169,577	4,100,372	3,896,656	5,470,573	66%	2,351	26%
	2027	5,901,167	4,352,494	4,151,478	5,842,014	74%	2,270	28%
	2028	5,626,859	4,620,074	4,412,486	6,231,114	82%	2,186	29%
	2029	5,347,146	4,877,610	4,676,859	6,624,596	91%	2,099	31%
	2030	5,063,650	5,121,402	4,938,052	7,011,733	101%	2,008	33%
	2031	4,778,005	5,347,768	5,190,044	7,383,888	112%	1,915	34%
	2032	4,491,709	5,553,298	5,427,250	7,734,390	124%	1,820	36%
	2033	4,206,362	5,733,407	5,644,766	8,056,691	136%	1,724	37%
	2034	3,923,077	5,884,645	5,838,334	8,344,876	150%	1,626	39%
	2035	3,643,234	5,997,856	6,002,321	8,589,251	165%	1,527	41%
	2036	3,367,940	6,061,588	6,129,311	8,775,713	180%	1,429	42%
	2037	3,098,544	6,085,674	6,216,190	8,903,034	196%	1,330	44%
	2038	2,836,371	6,065,351	6,260,232	8,967,848	214%	1,233	45%
	2039	2,582,757	6,000,908	6,259,605	8,968,851	232%	1,137	46%
	2040	2,338,949	5,879,632	6,210,076	8,896,021	251%	1,043	48%
	2041	2,106,162	5,706,697	6,109,717	8,746,350	271%	953	49%
	2042	1,885,648	5,485,224	5,958,293	8,520,192	291%	866	50%
	2043	1,678,410	5,219,092	5,756,973	8,220,681	311%	782	51%
	2044	1,485,103	4,925,956	5,513,120	7,861,603	332%	704	52%
	2045	1,306,014	4,607,340	5,233,983	7,451,290	353%	630	53%
	2046	1,141,550	4,271,522	4,926,589	6,999,608	374%	560	54%
	2047	991,741	3,922,714	4,597,145	6,514,674	396%	496	54%
	2048	856,488	3,572,527	4,252,404	6,009,804	417%	438	55%
	2049	735,233	3,230,713	3,901,253	5,499,583	439%	384	56%
	2050	627,515	2,897,581	3,550,652	4,992,199	462%	335	56%
	2051	532,438	2,577,158	3,206,224	4,494,457	484%	292	56%
	2052-2056	1,618,950	8,789,173	11,379,491	15,791,414	543%	957	58%
	2057-2061	618,410	3,993,555	5,546,970	7,528,584	646%	436	58%
	2062-2066	216,631	1,556,842	2,293,888	3,031,012	719%	194	58%
	2067-2071	74,356	576,143	860,333	1,101,465	775%	87	58%
	2072-2076	26,696	224,470	324,449	402,397	841%	38	58%

[1] Actual earned premium increases from the history to projection because of differences in the treatment of waiver of premium. Historical data reduced earned premium for waiver, whereas projections treat waiver as an increase to claims with no impact on premium. The difference in the treatment of waiver has an immaterial impact on the lifetime loss ratio.

[2] Incurred Claims are discounted to the year of incurral, whereas Paid Claims and Claim Reserves are calendar year values that are not discounted to the date of incurral.



**Attachment 12D**  
**Massachusetts Mutual Life Insurance Company**  
**Actual and Projected Experience by Calendar Year**  
**Nationwide Experience Restated to Proposed Increase From Inception**  
**Lifetime-Pay Policy Forms Issued On or After October 1, 2003 with Non-Lifetime Benefit Periods and No Inflation**

	Calendar Year	Actual or Projected Experience using Current Assumptions						Cumulative LR with Interest
		A Earned Premium <sup>[1]</sup>	B Incurred Claims <sup>[2]</sup>	C Paid Claims <sup>[2]</sup>	D Claim Reserves <sup>[2]</sup>	E = B / A Incurred Loss Ratio	F End of Year Lives	G Actual (Column E) with Max. Val. Interest
Historical Experience	2000	0	0	0	0	0%	0	0%
	2001	0	0	0	0	0%	0	0%
	2002	0	0	0	0	0%	0	0%
	2003	41,198	0	0	0	0%	105	0%
	2004	648,221	0	0	0	0%	353	0%
	2005	1,508,714	0	0	0	0%	664	0%
	2006	2,232,829	98	0	99	0%	886	0%
	2007	2,903,544	388,752	12,644	383,169	13%	1,111	5%
	2008	3,580,443	363,499	101,472	659,881	10%	1,343	7%
	2009	4,217,100	299,327	291,901	688,927	7%	1,557	7%
	2010	5,126,729	16,903	237,702	484,428	0%	1,875	5%
	2011	6,282,341	332,607	202,551	634,896	5%	2,429	5%
	2012	8,014,967	1,038,392	390,199	1,320,251	13%	2,958	7%
	2013	8,807,179	904,878	450,391	1,821,078	10%	3,224	8%
	2014	8,804,426	1,219,379	763,245	2,342,978	14%	3,149	8%
	2015	8,484,059	738,234	932,900	2,237,655	9%	3,072	8%
	2016	8,230,291	505,840	946,258	1,227,488	6%	3,009	8%
Projected Future Experience (60 Years)	2017	8,240,166	1,810,885	744,976	1,736,587	22%	2,947	9%
	2018	8,031,892	2,048,318	1,295,970	2,325,900	26%	2,887	11%
	2019	7,823,680	2,304,249	1,831,275	2,782,822	29%	2,828	12%
	2020	7,612,082	2,569,594	2,253,640	3,191,637	34%	2,769	13%
	2021	7,394,346	2,839,760	2,545,718	3,590,321	38%	2,707	14%
	2022	7,167,860	3,107,283	2,833,913	3,979,892	43%	2,642	16%
	2023	6,931,565	3,365,259	3,109,998	4,362,588	49%	2,574	17%
	2024	6,685,823	3,616,866	3,378,949	4,738,945	54%	2,503	18%
	2025	6,431,454	3,860,390	3,641,041	5,107,488	60%	2,429	20%
	2026	6,169,577	4,100,372	3,896,865	5,470,746	66%	2,351	21%
	2027	5,901,167	4,352,494	4,151,600	5,842,068	74%	2,270	23%
	2028	5,626,859	4,620,074	4,412,535	6,231,121	82%	2,186	24%
	2029	5,347,146	4,877,610	4,676,866	6,624,596	91%	2,099	25%
	2030	5,063,650	5,121,402	4,938,052	7,011,733	101%	2,008	27%
	2031	4,778,005	5,347,768	5,190,044	7,383,888	112%	1,915	28%
	2032	4,491,709	5,553,298	5,427,250	7,734,390	124%	1,820	30%
	2033	4,206,362	5,733,407	5,644,766	8,056,691	136%	1,724	31%
	2034	3,923,077	5,884,645	5,838,334	8,344,876	150%	1,626	32%
	2035	3,643,234	5,997,856	6,002,321	8,589,251	165%	1,527	34%
	2036	3,367,940	6,061,588	6,129,311	8,775,713	180%	1,429	35%
	2037	3,098,544	6,085,674	6,216,190	8,903,034	196%	1,330	36%
	2038	2,836,371	6,065,351	6,260,232	8,967,848	214%	1,233	38%
	2039	2,582,757	6,000,908	6,259,605	8,968,851	232%	1,137	39%
	2040	2,338,949	5,879,632	6,210,076	8,896,021	251%	1,043	40%
	2041	2,106,162	5,706,697	6,109,717	8,746,350	271%	953	41%
	2042	1,885,648	5,485,224	5,958,293	8,520,192	291%	866	42%
	2043	1,678,410	5,219,092	5,756,973	8,220,681	311%	782	43%
	2044	1,485,103	4,925,956	5,513,120	7,861,603	332%	704	44%
	2045	1,306,014	4,607,340	5,233,983	7,451,290	353%	630	45%
	2046	1,141,550	4,271,522	4,926,589	6,999,608	374%	560	45%
	2047	991,741	3,922,714	4,597,145	6,514,674	396%	496	46%
	2048	856,488	3,572,527	4,252,404	6,009,804	417%	438	46%
	2049	735,233	3,230,713	3,901,253	5,499,583	439%	384	47%
	2050	627,515	2,897,581	3,550,652	4,992,199	462%	335	47%
	2051	532,438	2,577,158	3,206,224	4,494,457	484%	292	48%
	2052-2056	1,618,950	8,789,173	11,379,491	15,791,414	543%	957	49%
	2057-2061	618,410	3,993,555	5,546,970	7,528,584	646%	436	49%
	2062-2066	216,631	1,556,842	2,293,888	3,031,012	719%	194	49%
	2067-2071	74,356	576,143	860,333	1,101,465	775%	87	49%
	2072-2076	26,696	224,470	324,449	402,397	841%	38	49%

[1] Actual earned premium increases from the history to projection because of differences in the treatment of waiver of premium. Historical data reduced earned premium for waiver, whereas projections treat waiver as an increase to claims with no impact on premium. The difference in the treatment of waiver has an immaterial impact on the lifetime loss ratio.

[2] Incurred Claims are discounted to the year of incurral, whereas Paid Claims and Claim Reserves are calendar year values that are not discounted to the date of incurral.

**Attachment 12E**  
**Massachusetts Mutual Life Insurance Company**  
**Projected Experience by Calendar Year**  
**Nationwide Expected Experience**  
**Lifetime-Pay Policy Forms Issued On or After October 1, 2003 with Non-Lifetime Benefit Periods and No Inflation**

	Calendar Year	Projected Experience using Pricing Assumptions						Cumulative LR with Interest
		A  Earned Premium	B  Incurred Claims <sup>[1]</sup>	C  Paid Claims <sup>[1]</sup>	D  Claim Reserves <sup>[1]</sup>	E = B / A  Incurred Loss Ratio	F  End of Year Lives	G  Actual (Column E) with Max. Val. Interest
Projected Experience	2000	0	0	0	0	0%	0	0%
	2001	0	0	0	0	0%	0	0%
	2002	0	0	0	0	0%	0	0%
	2003	27,596	541	67	464	2%	105	2%
	2004	441,851	9,859	1,371	8,704	2%	357	2%
	2005	1,014,218	32,965	7,406	33,030	3%	663	3%
	2006	1,472,553	75,762	23,090	82,724	5%	859	4%
	2007	1,884,449	142,796	53,815	166,272	8%	1,065	5%
	2008	2,312,383	233,417	104,418	287,149	10%	1,274	7%
	2009	2,759,957	348,965	178,095	448,126	13%	1,537	8%
	2010	3,448,631	477,235	275,562	640,179	14%	1,847	10%
	2011	4,316,598	607,816	392,450	849,183	14%	2,389	11%
	2012	5,657,060	765,763	524,644	1,089,194	14%	2,937	11%
	2013	6,382,993	956,333	673,764	1,372,875	15%	3,205	12%
	2014	6,450,582	1,112,168	835,598	1,648,996	17%	3,117	13%
	2015	6,239,244	1,263,456	1,000,216	1,915,148	20%	3,036	14%
	2016	6,043,019	1,432,397	1,168,944	2,190,708	24%	2,963	15%
	2017	5,847,304	1,627,439	1,349,288	2,494,213	28%	2,883	16%
	2018	5,642,477	1,805,184	1,541,896	2,797,524	32%	2,803	17%
	2019	5,432,948	1,957,196	1,736,954	3,077,425	36%	2,721	18%
	2020	5,214,993	2,115,724	1,927,477	3,350,639	41%	2,637	20%
	2021	4,992,779	2,254,362	2,107,192	3,605,303	45%	2,552	21%
	2022	4,769,856	2,387,695	2,275,971	3,847,589	50%	2,466	22%
	2023	4,546,976	2,521,175	2,437,151	4,085,210	55%	2,380	24%
	2024	4,324,736	2,651,254	2,592,862	4,319,395	61%	2,293	25%
	2025	4,103,465	2,805,607	2,746,127	4,573,511	68%	2,205	26%
	2026	3,882,879	2,956,581	2,905,501	4,835,306	76%	2,116	27%
	2027	3,663,597	3,091,844	3,067,264	5,086,783	84%	2,026	29%
	2028	3,445,597	3,239,254	3,228,217	5,343,597	94%	1,935	30%
	2029	3,229,507	3,377,933	3,387,956	5,597,776	105%	1,844	32%
	2030	3,016,094	3,506,763	3,538,813	5,842,672	116%	1,752	33%
	2031	2,805,875	3,619,458	3,679,801	6,069,219	129%	1,660	34%
	2032	2,599,604	3,696,945	3,807,644	6,257,097	142%	1,567	36%
	2033	2,398,169	3,746,199	3,914,973	6,401,547	156%	1,474	37%
	2034	2,202,597	3,768,825	3,997,668	6,501,167	171%	1,382	38%
	2035	2,013,766	3,763,080	4,052,569	6,553,114	187%	1,291	40%
	2036	1,832,220	3,730,791	4,078,835	6,556,982	204%	1,201	41%
	2037	1,658,613	3,670,557	4,069,479	6,511,523	221%	1,112	42%
	2038	1,493,794	3,590,171	4,030,011	6,424,519	240%	1,026	43%
	2039	1,338,101	3,482,470	3,964,860	6,293,311	260%	942	44%
	2040	1,191,998	3,346,678	3,872,897	6,115,016	281%	861	45%
	2041	1,055,978	3,194,287	3,752,340	5,898,343	302%	784	46%
	2042	930,233	3,027,450	3,608,892	5,649,200	325%	710	47%
	2043	814,989	2,847,563	3,444,939	5,371,194	349%	641	48%
	2044	710,167	2,658,936	3,267,551	5,068,703	374%	576	48%
	2045	615,554	2,471,959	3,078,279	4,753,610	402%	515	49%
	2046	530,934	2,286,731	2,879,772	4,433,707	431%	459	50%
	2047	455,742	2,101,820	2,677,335	4,111,851	461%	408	50%
	2048	389,295	1,919,433	2,476,467	3,790,542	493%	361	51%
	2049	331,013	1,737,420	2,278,699	3,469,008	525%	318	51%
	2050	280,282	1,567,219	2,083,922	3,156,779	559%	280	51%
	2051	236,470	1,405,736	1,894,092	2,856,365	594%	246	52%
	2052-2056	716,299	4,888,476	6,875,036	10,231,267	682%	832	52%
	2057-2061	282,226	2,292,329	3,468,652	5,053,183	812%	414	53%
	2062-2066	109,751	936,435	1,470,153	2,118,170	853%	208	53%
	2067-2071	44,487	400,568	609,637	875,516	900%	104	53%
	2072-2076	17,896	180,117	272,613	378,851	1,006%	48	53%

[1] Incurred Claims are discounted to the year of incurral, whereas Paid Claims and Claim Reserves are calendar year values that are not discounted to the date of incurral.

**Attachment 12F**  
**Massachusetts Mutual Life Insurance Company**  
**Actual and Projected Experience by Calendar Year**  
**Nationwide Experience - Before Requested Rate Increase**  
**Lifetime-Pay Policy Forms Issued On or After October 1, 2003 with Non-Lifetime Benefit Periods and No Inflation**

	Calendar Year	Actual or Projected Experience using Original Pricing Assumptions						Cumulative LR with Interest
		A Earned Premium	B Incurred Claims <sup>[1]</sup>	C Paid Claims <sup>[1][2]</sup>	D Claim Reserves <sup>[1][2]</sup>	E = B / A Incurred Loss Ratio	F End of Year Lives	G Actual (Column E) with Max. Val. Interest
Historical Experience	2000	0	0	0	0	0%	0	0%
	2001	0	0	0	0	0%	0	0%
	2002	0	0	0	0	0%	0	0%
	2003	27,672	0	0	0	0%	105	0%
	2004	434,179	0	0	0	0%	353	0%
	2005	1,007,429	0	0	0	0%	664	0%
	2006	1,507,571	98	0	99	0%	886	0%
	2007	1,975,556	388,752	12,644	383,169	20%	1,111	7%
	2008	2,447,384	363,499	101,472	659,881	15%	1,343	10%
	2009	2,921,143	299,327	291,901	688,927	10%	1,557	10%
	2010	3,610,523	16,903	237,702	484,428	0%	1,875	8%
	2011	4,483,615	332,607	202,551	634,896	7%	2,429	8%
	2012	5,806,207	1,038,392	390,199	1,320,251	18%	2,958	10%
	2013	6,511,603	904,878	450,391	1,821,078	14%	3,224	11%
	2014	6,554,058	1,219,379	763,245	2,342,978	19%	3,149	12%
	2015	6,319,043	738,234	932,900	2,237,655	12%	3,072	12%
	2016	6,130,225	505,840	946,258	1,227,488	8%	3,009	11%
Projected Future Experience (60 Years)	2017	5,962,925	1,894,240	0	0	32%	2,918	13%
	2018	5,734,730	2,064,210	0	0	36%	2,828	15%
	2019	5,501,968	2,207,946	0	0	40%	2,735	17%
	2020	5,260,316	2,351,078	0	0	45%	2,639	18%
	2021	5,014,927	2,471,909	0	0	49%	2,543	20%
	2022	4,771,106	2,581,782	0	0	54%	2,447	21%
	2023	4,529,893	2,690,189	0	0	59%	2,351	23%
	2024	4,291,801	2,793,223	0	0	65%	2,255	24%
	2025	4,057,047	2,916,815	0	0	72%	2,160	25%
	2026	3,825,209	3,035,109	0	0	79%	2,064	27%
	2027	3,596,859	3,136,177	0	0	87%	1,969	28%
	2028	3,371,911	3,249,544	0	0	96%	1,873	30%
	2029	3,150,675	3,354,135	0	0	106%	1,778	31%
	2030	2,933,637	3,450,794	0	0	118%	1,682	32%
	2031	2,721,191	3,530,294	0	0	130%	1,587	34%
	2032	2,513,963	3,575,492	0	0	142%	1,492	35%
	2033	2,312,729	3,599,573	0	0	156%	1,398	36%
	2034	2,118,301	3,597,803	0	0	170%	1,305	38%
	2035	1,931,382	3,566,145	0	0	185%	1,213	39%
	2036	1,752,488	3,515,210	0	0	201%	1,123	40%
	2037	1,582,056	3,439,260	0	0	217%	1,036	41%
	2038	1,420,817	3,347,197	0	0	236%	951	42%
	2039	1,269,071	3,228,523	0	0	254%	868	43%
	2040	1,127,132	3,086,942	0	0	274%	789	44%
	2041	995,468	2,932,810	0	0	295%	714	45%
	2042	874,153	2,766,713	0	0	317%	643	45%
	2043	763,345	2,590,664	0	0	339%	576	46%
	2044	662,898	2,409,197	0	0	363%	513	47%
	2045	572,522	2,233,083	0	0	390%	455	47%
	2046	491,944	2,057,801	0	0	418%	402	48%
	2047	420,529	1,885,246	0	0	448%	354	48%
	2048	357,566	1,714,615	0	0	480%	310	49%
	2049	302,475	1,544,235	0	0	511%	270	49%
	2050	254,613	1,388,127	0	0	545%	234	49%
	2051	213,358	1,240,327	0	0	581%	203	49%
	2052-2056	631,363	4,248,873	0	0	673%	657	50%
	2057-2061	233,341	1,905,537	0	0	817%	296	51%
	2062-2066	82,651	717,411	0	0	868%	134	51%
	2067-2071	29,937	276,468	0	0	923%	62	51%
	2072-2076	10,745	112,883	0	0	1,051%	27	51%

[1] Incurred Claims are discounted to the year of incurral, whereas Paid Claims and Claim Reserves are calendar year values that are not discounted to the date of incurral.

[2] Projected values for paid claims and claim reserves are not readily available in the model used to project original pricing assumptions based on actual historical experience.

**Attachment 13A**  
**Massachusetts Mutual Life Insurance Company**  
**Actual and Projected Experience by Calendar Year**  
**Nationwide Experience - Before Requested Rate Increase**  
**Lifetime-Pay Policy Forms Issued On or After October 1, 2003 with Non-Lifetime Benefit Periods and Auto Inflation**

	Calendar Year	Actual or Projected Experience using Current Assumptions						Cumulative LR with Interest
		A Earned Premium	B Incurred Claims <sup>[1]</sup>	C Paid Claims <sup>[1]</sup>	D Claim Reserves <sup>[1]</sup>	E = B / A Incurred Loss Ratio	F End of Year Lives	G Actual (Column E) with Max. Val. Interest
Historical Experience	2000	0	0	0	0	0%	0	0%
	2001	0	0	0	0	0%	0	0%
	2002	0	0	0	0	0%	0	0%
	2003	100,836	0	0	0	0%	460	0%
	2004	2,333,273	0	0	0	0%	2,312	0%
	2005	6,341,225	0	0	0	0%	4,488	0%
	2006	9,217,588	0	0	0	0%	5,524	0%
	2007	11,491,456	187,239	25,721	165,206	2%	6,565	1%
	2008	14,356,202	289,768	84,607	379,703	2%	7,890	1%
	2009	17,572,375	82,999	93,302	379,018	0%	9,491	1%
	2010	22,519,040	2,137,270	213,120	2,350,459	9%	11,887	3%
	2011	29,761,035	1,211,637	593,853	3,040,171	4%	15,518	3%
	2012	41,642,689	1,525,331	922,560	3,743,048	4%	20,235	3%
	2013	50,252,475	2,284,870	1,358,947	4,796,791	5%	22,632	4%
	2014	52,081,486	1,426,197	1,699,062	4,671,899	3%	22,430	3%
	2015	51,472,012	3,368,194	2,044,841	6,177,544	7%	22,308	4%
	2016	51,053,396	4,227,494	2,365,915	6,475,487	8%	22,150	4%
Projected Future Experience (60 Years)	2017	50,888,037	5,868,663	3,180,105	6,776,307	12%	21,813	5%
	2018	50,122,113	7,100,308	4,584,779	8,723,510	14%	21,504	6%
	2019	49,417,938	8,582,177	6,529,442	10,732,835	17%	21,213	7%
	2020	48,745,305	10,351,095	8,464,425	12,985,300	21%	20,928	8%
	2021	48,079,674	12,403,003	10,199,765	15,629,012	26%	20,640	9%
	2022	47,397,234	14,745,327	12,193,406	18,707,912	31%	20,341	10%
	2023	46,680,275	17,428,679	14,508,940	22,254,603	37%	20,024	12%
	2024	45,920,383	20,497,629	17,171,688	26,322,274	45%	19,689	13%
	2025	45,112,304	24,011,014	20,220,262	30,986,284	53%	19,334	15%
	2026	44,250,813	27,991,268	23,694,157	36,306,626	63%	18,956	16%
	2027	43,331,932	32,710,331	27,706,017	42,508,350	75%	18,552	18%
	2028	42,347,333	38,220,605	32,370,981	49,758,581	90%	18,119	20%
	2029	41,288,384	44,383,687	37,728,019	58,047,571	107%	17,656	23%
	2030	40,152,233	51,212,503	43,786,280	67,369,401	128%	17,161	25%
	2031	38,936,896	58,672,557	50,532,709	77,696,014	151%	16,633	28%
	2032	37,641,755	66,640,725	57,916,977	88,923,931	177%	16,072	31%
	2033	36,267,774	75,131,620	65,895,831	101,006,002	207%	15,479	35%
	2034	34,816,962	84,025,483	74,403,965	113,837,723	241%	14,854	38%
	2035	33,292,445	93,110,398	83,327,014	127,211,553	280%	14,199	42%
	2036	31,698,789	102,128,244	92,491,013	140,827,714	322%	13,515	46%
	2037	30,043,028	110,990,894	101,730,464	154,457,070	369%	12,805	50%
	2038	28,334,378	119,503,920	110,870,539	167,843,537	422%	12,074	54%
	2039	26,584,410	127,346,214	119,692,073	180,619,072	479%	11,326	58%
	2040	24,806,184	134,018,744	127,870,690	192,225,934	540%	10,567	63%
	2041	23,014,034	139,405,187	135,114,776	202,269,978	606%	9,804	67%
	2042	21,223,877	143,439,390	141,206,280	210,500,973	676%	9,042	71%
	2043	19,451,370	145,987,965	145,971,641	216,702,201	751%	8,289	75%
	2044	17,713,490	146,966,719	149,276,607	220,701,787	830%	7,551	79%
	2045	16,025,117	146,245,272	151,001,160	222,312,246	913%	6,835	83%
	2046	14,401,059	143,907,473	151,091,079	221,482,368	999%	6,147	87%
	2047	12,854,422	140,003,098	149,529,996	218,227,061	1,089%	5,492	90%
	2048	11,395,932	134,606,592	146,349,455	212,605,684	1,181%	4,874	94%
	2049	10,033,792	128,052,793	141,676,326	204,892,404	1,276%	4,298	96%
	2050	8,774,301	120,495,494	135,681,806	195,351,408	1,373%	3,765	99%
	2051	7,621,331	112,282,412	128,596,351	184,374,760	1,473%	3,277	102%
	2052-2056	24,497,486	429,105,644	515,010,497	730,557,936	1,752%	10,618	110%
	2057-2061	10,174,251	232,952,496	301,663,435	421,015,710	2,290%	4,524	114%
	2062-2066	3,777,692	110,079,204	149,626,054	207,610,768	2,914%	1,754	115%
	2067-2071	1,319,112	49,261,499	68,355,800	95,507,410	3,734%	648	116%
	2072-2076	433,788	21,054,836	30,161,731	42,087,371	4,854%	227	116%

[1] Incurred Claims are discounted to the year of incurral, whereas Paid Claims and Claim Reserves are calendar year values that are not discounted to the date of incurral.

**Attachment 13B**  
**Massachusetts Mutual Life Insurance Company**  
**Actual and Projected Experience by Calendar Year**  
**Nationwide Experience - After Requested Rate Increase**  
**Lifetime-Pay Policy Forms Issued On or After October 1, 2003 with Non-Lifetime Benefit Periods and Auto Inflation**

	Calendar Year	Actual or Projected Experience using Current Assumptions						Cumulative LR with Interest
		A Earned Premium	B Incurred Claims <sup>[1]</sup>	C Paid Claims <sup>[1]</sup>	D Claim Reserves <sup>[1]</sup>	E = B / A Incurred Loss Ratio	F End of Year Lives	G Actual (Column E) with Max. Val. Interest
Historical Experience	2000	0	0	0	0	0%	0	0%
	2001	0	0	0	0	0%	0	0%
	2002	0	0	0	0	0%	0	0%
	2003	100,836	0	0	0	0%	460	0%
	2004	2,333,273	0	0	0	0%	2,312	0%
	2005	6,341,225	0	0	0	0%	4,488	0%
	2006	9,217,588	0	0	0	0%	5,524	0%
	2007	11,491,456	187,239	25,721	165,206	2%	6,565	1%
	2008	14,356,202	289,768	84,607	379,703	2%	7,890	1%
	2009	17,572,375	82,999	93,302	379,018	0%	9,491	1%
	2010	22,519,040	2,137,270	213,120	2,350,459	9%	11,887	3%
	2011	29,761,035	1,211,637	593,853	3,040,171	4%	15,518	3%
	2012	41,642,689	1,525,331	922,560	3,743,048	4%	20,235	3%
	2013	50,252,475	2,284,870	1,358,947	4,796,791	5%	22,632	4%
	2014	52,081,486	1,426,197	1,699,062	4,671,899	3%	22,430	3%
	2015	51,472,012	3,368,194	2,044,841	6,177,544	7%	22,308	4%
	2016	51,053,396	4,227,494	2,365,915	6,475,487	8%	22,150	4%
Projected Future Experience (60 Years)	2017	50,888,037	5,868,663	3,180,105	6,776,307	12%	21,813	5%
	2018	50,122,113	7,100,308	4,584,779	8,723,510	14%	21,504	6%
	2019	57,238,864	8,014,136	6,359,183	10,334,159	14%	20,158	7%
	2020	63,896,629	9,065,595	7,886,675	11,849,655	14%	19,886	7%
	2021	63,033,253	10,855,588	9,199,146	13,900,021	17%	19,612	8%
	2022	62,146,599	12,895,936	10,799,202	16,461,651	21%	19,327	9%
	2023	61,214,948	15,228,133	12,745,441	19,494,145	25%	19,026	10%
	2024	60,227,867	17,890,188	15,024,833	23,008,099	30%	18,708	11%
	2025	59,178,655	20,930,923	17,654,980	27,046,362	35%	18,369	12%
	2026	58,060,747	24,366,608	20,659,376	31,645,582	42%	18,010	13%
	2027	56,869,071	28,430,369	24,123,450	36,994,789	50%	17,625	15%
	2028	55,592,777	33,165,284	28,142,469	43,234,845	60%	17,213	16%
	2029	54,220,631	38,445,850	32,746,910	50,350,905	71%	16,772	18%
	2030	52,748,813	44,279,113	37,940,540	58,331,261	84%	16,301	20%
	2031	51,174,522	50,630,325	43,707,331	67,144,684	99%	15,799	22%
	2032	49,496,658	57,393,269	50,000,782	76,697,843	116%	15,265	24%
	2033	47,716,120	64,576,010	56,780,175	86,944,708	135%	14,701	27%
	2034	45,834,998	72,073,992	63,986,044	97,791,550	157%	14,106	29%
	2035	43,856,849	79,705,673	71,518,218	109,058,493	182%	13,482	32%
	2036	41,787,123	87,245,400	79,225,127	120,484,540	209%	12,831	35%
	2037	39,634,455	94,616,346	86,962,887	131,869,891	239%	12,156	38%
	2038	37,410,310	101,657,115	94,581,698	142,996,885	272%	11,461	41%
	2039	35,129,280	108,104,757	101,897,803	153,560,326	308%	10,750	44%
	2040	32,807,966	113,533,601	108,637,969	163,089,904	346%	10,028	47%
	2041	30,464,793	117,854,387	114,559,314	171,259,219	387%	9,303	50%
	2042	28,120,331	121,016,924	119,482,431	177,864,556	430%	8,579	53%
	2043	25,794,902	122,922,012	123,268,509	182,736,555	477%	7,863	56%
	2044	23,510,792	123,515,434	125,815,222	185,750,086	525%	7,163	59%
	2045	21,287,718	122,694,603	127,032,634	186,763,415	576%	6,483	62%
	2046	19,145,461	120,542,218	126,886,514	185,750,717	630%	5,830	64%
	2047	17,101,659	117,105,066	125,373,061	182,737,118	685%	5,208	67%
	2048	15,170,951	112,450,894	122,526,839	177,782,537	741%	4,623	69%
	2049	13,364,772	106,860,089	118,459,356	171,121,677	800%	4,076	71%
	2050	11,692,085	100,466,487	113,318,274	162,981,807	859%	3,571	73%
	2051	10,158,687	93,558,724	107,298,680	153,692,700	921%	3,108	75%
	2052-2056	32,651,434	357,378,778	429,103,105	608,298,995	1,095%	10,078	81%
	2057-2061	13,528,674	194,444,120	251,499,376	350,965,818	1,437%	4,300	84%
	2062-2066	5,004,907	92,328,726	125,239,288	173,860,499	1,845%	1,670	85%
	2067-2071	1,744,675	41,371,594	57,396,158	80,216,669	2,371%	618	85%
	2072-2076	574,542	17,578,336	25,252,879	35,215,525	3,060%	216	85%

[1] Incurred Claims are discounted to the year of incurral, whereas Paid Claims and Claim Reserves are calendar year values that are not discounted to the date of incurral.

**Attachment 13C**  
**Massachusetts Mutual Life Insurance Company**  
**Actual and Projected Experience by Calendar Year**  
**Nationwide Experience - After Requested Rate Increase without RBO, CBUL, and Adverse Selection**  
**Lifetime-Pay Policy Forms Issued On or After October 1, 2003 with Non-Lifetime Benefit Periods and Auto Inflation**

	Calendar Year	Actual or Projected Experience using Current Assumptions						Cumulative LR with Interest
		A Earned Premium	B Incurred Claims <sup>[1]</sup>	C Paid Claims <sup>[1]</sup>	D Claim Reserves <sup>[1]</sup>	E = B / A Incurred Loss Ratio	F End of Year Lives	G Actual (Column E) with Max. Val. Interest
Historical Experience	2000	0	0	0	0	0%	0	0%
	2001	0	0	0	0	0%	0	0%
	2002	0	0	0	0	0%	0	0%
	2003	100,836	0	0	0	0%	460	0%
	2004	2,333,273	0	0	0	0%	2,312	0%
	2005	6,341,225	0	0	0	0%	4,488	0%
	2006	9,217,588	0	0	0	0%	5,524	0%
	2007	11,491,456	187,239	25,721	165,206	2%	6,565	1%
	2008	14,356,202	289,768	84,607	379,703	2%	7,890	1%
	2009	17,572,375	82,999	93,302	379,018	0%	9,491	1%
	2010	22,519,040	2,137,270	213,120	2,350,459	9%	11,887	3%
	2011	29,761,035	1,211,637	593,853	3,040,171	4%	15,518	3%
	2012	41,642,689	1,525,331	922,560	3,743,048	4%	20,235	3%
	2013	50,252,475	2,284,870	1,358,947	4,796,791	5%	22,632	4%
	2014	52,081,486	1,426,197	1,699,062	4,671,899	3%	22,430	3%
	2015	51,472,012	3,368,194	2,044,841	6,177,544	7%	22,308	4%
	2016	51,053,396	4,227,494	2,365,915	6,475,487	8%	22,150	4%
Projected Future Experience (60 Years)	2017	50,888,037	5,868,663	3,180,105	6,776,307	12%	21,813	5%
	2018	50,122,113	7,100,308	4,584,779	8,723,510	14%	21,504	6%
	2019	63,986,249	8,657,134	6,551,421	10,785,957	14%	21,213	7%
	2020	76,919,113	10,516,059	8,537,938	13,133,657	14%	20,928	7%
	2021	75,891,282	12,591,517	10,323,615	15,847,877	17%	20,640	8%
	2022	74,834,223	14,959,012	12,360,145	18,981,228	20%	20,341	9%
	2023	73,723,457	17,669,489	14,711,457	22,575,132	24%	20,024	10%
	2024	72,547,080	20,767,580	17,406,856	26,687,830	29%	19,689	11%
	2025	71,297,229	24,312,534	20,487,036	31,398,159	34%	19,334	12%
	2026	69,966,297	28,326,575	23,993,043	36,767,885	40%	18,956	14%
	2027	68,548,308	33,083,979	28,039,675	43,024,084	48%	18,552	15%
	2028	67,030,248	38,636,888	32,743,003	50,334,746	58%	18,119	17%
	2029	65,398,661	44,844,730	38,141,714	58,689,077	69%	17,656	19%
	2030	63,648,824	51,720,164	44,244,473	68,080,313	81%	17,161	21%
	2031	61,777,117	59,227,749	51,037,566	78,479,227	96%	16,633	23%
	2032	59,781,850	67,242,924	58,469,714	89,780,643	112%	16,072	25%
	2033	57,663,663	75,780,316	66,496,877	101,936,482	131%	15,479	28%
	2034	55,424,418	84,718,978	75,052,904	114,840,935	153%	14,854	30%
	2035	53,067,751	93,845,229	84,022,283	128,284,480	177%	14,199	33%
	2036	50,599,581	102,899,294	93,229,677	141,965,020	203%	13,515	36%
	2037	48,029,588	111,792,872	102,508,486	155,651,979	233%	12,805	39%
	2038	45,370,835	120,330,758	111,682,936	169,087,962	265%	12,074	43%
	2039	42,640,182	128,190,059	120,532,721	181,902,925	301%	11,326	46%
	2040	39,856,974	134,869,398	128,731,866	193,536,298	338%	10,567	49%
	2041	37,042,949	140,252,973	135,987,662	203,592,685	379%	9,804	52%
	2042	34,222,509	144,275,251	142,081,600	211,821,670	422%	9,042	56%
	2043	31,419,903	146,803,009	146,839,997	218,006,639	467%	8,289	59%
	2044	28,662,023	147,752,579	150,128,780	221,976,177	515%	7,551	62%
	2045	25,972,891	146,994,114	151,828,316	223,543,424	566%	6,835	65%
	2046	23,376,792	144,612,841	151,885,128	222,658,464	619%	6,147	67%
	2047	20,895,536	140,659,619	150,283,742	219,337,727	673%	5,492	70%
	2048	18,547,466	135,210,039	147,056,763	213,642,229	729%	4,874	72%
	2049	16,347,215	128,601,341	142,332,530	205,848,794	787%	4,298	75%
	2050	14,306,450	120,988,483	136,283,780	196,223,960	846%	3,765	77%
	2051	12,433,038	112,720,933	129,142,575	185,162,357	907%	3,277	78%
	2052-2056	39,951,063	430,574,623	516,941,440	733,304,847	1,078%	10,618	85%
	2057-2061	16,506,252	233,575,847	302,561,413	422,264,925	1,415%	4,524	88%
	2062-2066	6,081,236	110,307,881	149,974,790	208,090,885	1,814%	1,754	89%
	2067-2071	2,117,061	49,342,094	68,480,825	95,680,929	2,331%	648	89%
	2072-2076	699,705	21,082,339	30,205,691	42,148,579	3,013%	227	89%

[1] Incurred Claims are discounted to the year of incurral, whereas Paid Claims and Claim Reserves are calendar year values that are not discounted to the date of incurral.

**Attachment 13D**  
**Massachusetts Mutual Life Insurance Company**  
**Actual and Projected Experience by Calendar Year**  
**Nationwide Experience Restated to Proposed Increase From Inception**  
**Lifetime-Pay Policy Forms Issued On or After October 1, 2003 with Non-Lifetime Benefit Periods and Auto Inflation**

	Calendar Year	Actual or Projected Experience using Current Assumptions						Cumulative LR with Interest
		A Earned Premium	B Incurred Claims <sup>[1]</sup>	C Paid Claims <sup>[1]</sup>	D Claim Reserves <sup>[1]</sup>	E = B / A Incurred Loss Ratio	F End of Year Lives	G Actual (Column E) with Max. Val. Interest
Historical Experience	2000	0	0	0	0	0%	0	0%
	2001	0	0	0	0	0%	0	0%
	2002	0	0	0	0	0%	0	0%
	2003	186,783	0	0	0	0%	460	0%
	2004	4,308,720	0	0	0	0%	2,312	0%
	2005	11,726,438	0	0	0	0%	4,488	0%
	2006	16,756,939	0	0	0	0%	5,524	0%
	2007	20,591,732	187,239	25,721	165,206	1%	6,565	0%
	2008	25,378,068	289,768	84,607	379,703	1%	7,890	1%
	2009	30,614,895	82,999	93,302	379,018	0%	9,491	1%
	2010	38,622,716	2,137,270	213,120	2,350,459	6%	11,887	2%
	2011	50,193,597	1,211,637	593,853	3,040,171	2%	15,518	2%
	2012	68,709,221	1,525,331	922,560	3,743,048	2%	20,235	2%
	2013	80,010,910	2,284,870	1,358,947	4,796,791	3%	22,632	2%
	2014	82,172,088	1,426,197	1,699,062	4,671,899	2%	22,430	2%
	2015	81,173,969	3,368,194	2,044,841	6,177,544	4%	22,308	2%
	2016	80,421,842	4,227,494	2,365,915	6,475,487	5%	22,150	3%
Projected Future Experience (60 Years)	2017	80,198,073	5,975,844	3,198,446	6,852,000	7%	21,813	3%
	2018	79,031,737	7,224,095	4,644,816	8,855,819	9%	21,504	4%
	2019	77,953,667	8,725,384	6,628,949	10,908,387	11%	21,213	4%
	2020	76,919,113	10,516,059	8,597,642	13,198,507	14%	20,928	5%
	2021	75,891,282	12,591,517	10,359,105	15,878,363	17%	20,640	6%
	2022	74,834,223	14,959,012	12,378,471	18,993,917	20%	20,341	6%
	2023	73,723,457	17,669,489	14,719,784	22,579,713	24%	20,024	7%
	2024	72,547,080	20,767,580	17,409,881	26,689,466	29%	19,689	8%
	2025	71,297,229	24,312,534	20,487,916	31,398,943	34%	19,334	9%
	2026	69,966,297	28,326,575	23,993,481	36,768,245	40%	18,956	10%
	2027	68,548,308	33,083,979	28,039,932	43,024,194	48%	18,552	11%
	2028	67,030,248	38,636,888	32,743,101	50,334,760	58%	18,119	13%
	2029	65,398,661	44,844,730	38,141,728	58,689,077	69%	17,656	14%
	2030	63,648,824	51,720,164	44,244,473	68,080,313	81%	17,161	16%
	2031	61,777,117	59,227,749	51,037,566	78,479,227	96%	16,633	18%
	2032	59,781,850	67,242,924	58,469,714	89,780,643	112%	16,072	20%
	2033	57,663,663	75,780,316	66,496,877	101,936,482	131%	15,479	22%
	2034	55,424,418	84,718,978	75,052,904	114,840,935	153%	14,854	24%
	2035	53,067,751	93,845,229	84,022,283	128,284,480	177%	14,199	26%
	2036	50,599,581	102,899,294	93,229,677	141,965,020	203%	13,515	29%
	2037	48,029,588	111,792,872	102,508,486	155,651,979	233%	12,805	31%
	2038	45,370,835	120,330,758	111,682,936	169,087,962	265%	12,074	34%
	2039	42,640,182	128,190,059	120,532,721	181,902,925	301%	11,326	37%
	2040	39,856,974	134,869,398	128,731,866	193,536,298	338%	10,567	39%
	2041	37,042,949	140,252,973	135,987,662	203,592,685	379%	9,804	42%
	2042	34,222,509	144,275,251	142,081,600	211,821,670	422%	9,042	45%
	2043	31,419,903	146,803,009	146,839,997	218,006,639	467%	8,289	47%
	2044	28,662,023	147,752,579	150,128,780	221,976,177	515%	7,551	50%
	2045	25,972,891	146,994,114	151,828,316	223,543,424	566%	6,835	52%
	2046	23,376,792	144,612,841	151,885,128	222,658,464	619%	6,147	54%
	2047	20,895,536	140,659,619	150,283,742	219,337,727	673%	5,492	57%
	2048	18,547,466	135,210,039	147,056,763	213,642,229	729%	4,874	59%
	2049	16,347,215	128,601,341	142,332,530	205,848,794	787%	4,298	60%
	2050	14,306,450	120,988,483	136,283,780	196,223,960	846%	3,765	62%
	2051	12,433,038	112,720,933	129,142,575	185,162,357	907%	3,277	64%
	2052-2056	39,951,063	430,574,623	516,941,440	733,304,847	1,078%	10,618	69%
	2057-2061	16,506,252	233,575,847	302,561,413	422,264,925	1,415%	4,524	71%
	2062-2066	6,081,236	110,307,881	149,974,790	208,090,885	1,814%	1,754	72%
	2067-2071	2,117,061	49,342,094	68,480,825	95,680,929	2,331%	648	73%
	2072-2076	699,705	21,082,339	30,205,691	42,148,579	3,013%	227	73%

[1] Incurred Claims are discounted to the year of incurral, whereas Paid Claims and Claim Reserves are calendar year values that are not discounted to the date of incurral.

**Attachment 13E**  
**Massachusetts Mutual Life Insurance Company**  
**Projected Experience by Calendar Year**  
**Nationwide Expected Experience**  
**Lifetime-Pay Policy Forms Issued On or After October 1, 2003 with Non-Lifetime Benefit Periods and Auto Inflation**

	Calendar Year	Projected Experience using Pricing Assumptions						Cumulative LR with Interest
		A Earned Premium	B Incurred Claims <sup>[1]</sup>	C Paid Claims <sup>[1]</sup>	D Claim Reserves <sup>[1]</sup>	E = B / A Incurred Loss Ratio	F End of Year Lives	G Actual (Column E) with Max. Val. Interest
Projected Experience	2000	0	0	0	0	0%	0	0%
	2001	0	0	0	0	0%	0	0%
	2002	0	0	0	0	0%	0	0%
	2003	100,716	1,164	143	1,009	1%	460	1%
	2004	2,347,623	29,496	4,170	25,988	1%	2,321	1%
	2005	6,334,099	111,670	24,456	111,061	2%	4,447	2%
	2006	8,954,689	258,506	77,843	285,646	3%	5,310	2%
	2007	10,896,124	496,352	183,305	587,514	5%	6,170	3%
	2008	13,467,440	827,581	360,888	1,038,965	6%	7,396	4%
	2009	16,659,834	1,258,963	625,454	1,657,101	8%	8,939	5%
	2010	21,646,062	1,743,119	979,760	2,409,853	8%	11,282	6%
	2011	28,912,104	2,216,695	1,403,188	3,223,321	8%	14,834	6%
	2012	40,745,814	2,806,241	1,876,707	4,165,052	7%	19,416	6%
	2013	49,170,725	3,612,981	2,418,739	5,362,509	7%	21,649	7%
	2014	50,753,399	4,292,373	3,033,978	6,584,790	8%	21,231	7%
	2015	49,839,355	4,983,384	3,689,175	7,818,988	10%	20,903	7%
	2016	49,142,270	5,801,877	4,396,951	9,164,059	12%	20,563	8%
	2017	48,209,248	6,778,757	5,195,300	10,708,956	14%	20,123	9%
	2018	47,201,265	7,807,379	6,106,023	12,407,007	17%	19,702	9%
	2019	46,208,104	8,863,807	7,121,058	14,207,152	19%	19,282	10%
	2020	45,198,455	10,064,855	8,243,171	16,184,471	22%	18,856	11%
	2021	44,171,698	11,326,684	9,454,256	18,310,019	26%	18,430	12%
	2022	43,121,400	12,680,921	10,757,473	20,592,283	29%	17,999	13%
	2023	42,036,086	14,204,746	12,172,089	23,101,494	34%	17,561	14%
	2024	40,919,770	15,942,262	13,730,652	25,917,161	39%	17,113	15%
	2025	39,770,584	17,933,779	15,465,404	29,117,520	45%	16,655	16%
	2026	38,580,268	20,125,243	17,408,559	32,693,850	52%	16,186	17%
	2027	37,346,715	22,532,074	19,575,679	36,650,010	60%	15,704	18%
	2028	36,066,779	25,209,503	21,983,635	41,036,813	70%	15,207	20%
	2029	34,739,741	28,033,107	24,636,530	45,778,301	81%	14,696	21%
	2030	33,366,592	31,029,027	27,507,102	50,852,662	93%	14,169	23%
	2031	31,948,339	34,160,761	30,575,237	56,211,598	107%	13,626	25%
	2032	30,485,757	37,382,172	33,827,195	61,790,146	123%	13,066	26%
	2033	28,982,269	40,617,383	37,219,066	67,492,971	140%	12,488	28%
	2034	27,443,706	43,735,125	40,678,624	73,161,459	159%	11,896	30%
	2035	25,876,562	46,821,791	44,127,558	78,787,179	181%	11,288	32%
	2036	24,287,895	49,743,131	47,530,975	84,251,190	205%	10,668	34%
	2037	22,684,583	52,414,122	50,838,995	89,417,587	231%	10,037	36%
	2038	21,076,712	54,742,947	53,968,150	94,135,405	260%	9,399	38%
	2039	19,476,550	56,691,843	56,823,289	98,287,684	291%	8,758	40%
	2040	17,896,432	58,224,714	59,325,388	101,782,170	325%	8,117	43%
	2041	16,347,922	59,237,822	61,409,842	104,484,092	362%	7,481	45%
	2042	14,842,135	59,692,014	63,022,250	106,288,533	402%	6,855	47%
	2043	13,391,272	59,570,565	64,101,311	107,124,216	445%	6,245	48%
	2044	12,005,898	58,903,789	64,599,813	106,983,259	491%	5,654	50%
	2045	10,693,987	57,785,948	64,497,583	105,949,292	540%	5,087	52%
	2046	9,462,335	56,160,956	63,824,964	104,010,590	594%	4,548	54%
	2047	8,317,228	54,019,891	62,599,559	101,148,241	649%	4,040	55%
	2048	7,262,821	51,540,526	60,837,984	97,504,629	710%	3,566	56%
	2049	6,300,585	48,768,201	58,607,849	93,197,053	774%	3,128	58%
	2050	5,430,628	45,768,901	55,977,467	88,346,196	843%	2,727	59%
	2051	4,650,724	42,627,000	53,010,848	83,091,357	917%	2,363	60%
	2052-2056	14,429,336	164,111,675	214,054,756	329,255,544	1,137%	7,584	64%
	2057-2061	5,670,938	91,680,730	129,117,814	193,104,936	1,617%	3,193	65%
	2062-2066	2,038,103	44,837,051	65,832,728	97,778,858	2,200%	1,234	66%
	2067-2071	703,441	20,332,480	30,740,325	45,833,393	2,890%	454	66%
	2072-2076	228,705	8,431,238	13,236,541	19,769,390	3,687%	156	67%

[1] Incurred Claims are discounted to the year of incurral, whereas Paid Claims and Claim Reserves are calendar year values that are not discounted to the date of incurral.



**Attachment 13F**  
**Massachusetts Mutual Life Insurance Company**  
**Actual and Projected Experience by Calendar Year**  
**Nationwide Experience - Before Requested Rate Increase**  
**Lifetime-Pay Policy Forms Issued On or After October 1, 2003 with Non-Lifetime Benefit Periods and Auto Inflation**

	Calendar Year	Actual or Projected Experience using Original Pricing Assumptions						Cumulative LR with Interest
		A Earned Premium	B Incurred Claims <sup>[1]</sup>	C Paid Claims <sup>[1][2]</sup>	D Claim Reserves <sup>[1][2]</sup>	E = B / A Incurred Loss Ratio	F End of Year Lives	G Actual (Column E) with Max. Val. Interest
Historical Experience	2000	0	0	0	0	0%	0	0%
	2001	0	0	0	0	0%	0	0%
	2002	0	0	0	0	0%	0	0%
	2003	100,836	0	0	0	0%	460	0%
	2004	2,333,273	0	0	0	0%	2,312	0%
	2005	6,341,225	0	0	0	0%	4,488	0%
	2006	9,217,588	0	0	0	0%	5,524	0%
	2007	11,491,456	187,239	25,721	165,206	2%	6,565	1%
	2008	14,356,202	289,768	84,607	379,703	2%	7,890	1%
	2009	17,572,375	82,999	93,302	379,018	0%	9,491	1%
	2010	22,519,040	2,137,270	213,120	2,350,459	9%	11,887	3%
	2011	29,761,035	1,211,637	593,853	3,040,171	4%	15,518	3%
	2012	41,642,689	1,525,331	922,560	3,743,048	4%	20,235	3%
	2013	50,252,475	2,284,870	1,358,947	4,796,791	5%	22,632	4%
	2014	52,081,486	1,426,197	1,699,062	4,671,899	3%	22,430	3%
	2015	51,472,012	3,368,194	2,044,841	6,177,544	7%	22,308	4%
	2016	51,053,396	4,227,494	2,365,915	6,475,487	8%	22,150	4%
Projected Future Experience (60 Years)	2017	50,449,752	8,861,448	0	0	18%	21,628	6%
	2018	49,307,216	10,069,784	0	0	20%	21,126	7%
	2019	48,177,143	11,318,054	0	0	23%	20,622	8%
	2020	47,025,656	12,701,493	0	0	27%	20,109	10%
	2021	45,856,059	14,116,581	0	0	31%	19,597	11%
	2022	44,666,178	15,608,877	0	0	35%	19,084	12%
	2023	43,447,460	17,255,496	0	0	40%	18,565	13%
	2024	42,202,213	19,081,289	0	0	45%	18,039	15%
	2025	40,929,448	21,123,194	0	0	52%	17,506	16%
	2026	39,621,201	23,339,025	0	0	59%	16,965	17%
	2027	38,275,549	25,735,362	0	0	67%	16,414	19%
	2028	36,889,500	28,353,846	0	0	77%	15,851	21%
	2029	35,462,694	31,072,532	0	0	88%	15,278	22%
	2030	33,996,393	33,914,087	0	0	100%	14,692	24%
	2031	32,491,814	36,831,763	0	0	113%	14,093	26%
	2032	30,949,783	39,783,596	0	0	129%	13,481	27%
	2033	29,373,630	42,705,311	0	0	145%	12,855	29%
	2034	27,769,207	45,468,205	0	0	164%	12,217	31%
	2035	26,142,822	48,176,414	0	0	184%	11,569	33%
	2036	24,501,267	50,676,766	0	0	207%	10,911	35%
	2037	22,851,195	52,910,922	0	0	232%	10,245	37%
	2038	21,202,660	54,803,882	0	0	258%	9,576	39%
	2039	19,567,703	56,305,163	0	0	288%	8,906	41%
	2040	17,958,300	57,393,823	0	0	320%	8,240	43%
	2041	16,385,713	57,991,245	0	0	354%	7,583	45%
	2042	14,860,538	58,063,081	0	0	391%	6,938	47%
	2043	13,394,636	57,612,256	0	0	430%	6,310	49%
	2044	11,998,188	56,657,329	0	0	472%	5,706	50%
	2045	10,678,624	55,338,572	0	0	518%	5,127	52%
	2046	9,442,188	53,561,851	0	0	567%	4,578	53%
	2047	8,294,555	51,320,802	0	0	619%	4,063	55%
	2048	7,239,334	48,802,323	0	0	674%	3,583	56%
	2049	6,277,682	46,031,493	0	0	733%	3,140	57%
	2050	5,409,549	43,070,842	0	0	796%	2,735	58%
	2051	4,632,290	40,018,603	0	0	864%	2,368	59%
	2052-2056	14,380,282	153,465,682	0	0	1,067%	7,593	63%
	2057-2061	5,666,755	85,533,145	0	0	1,509%	3,193	64%
	2062-2066	2,039,179	42,091,666	0	0	2,064%	1,232	65%
	2067-2071	695,955	19,217,179	0	0	2,761%	451	65%
	2072-2076	219,450	7,835,557	0	0	3,571%	153	65%

[1] Incurred Claims are discounted to the year of incurral, whereas Paid Claims and Claim Reserves are calendar year values that are not discounted to the date of incurral.

[2] Projected values for paid claims and claim reserves are not readily available in the model used to project original pricing assumptions based on actual historical experience.

**Attachment 14A**  
**Massachusetts Mutual Life Insurance Company**  
**Actual and Projected Experience by Calendar Year**  
**Nationwide Experience - Before Requested Rate Increase**  
**Lifetime-Pay Policy Forms Issued On or After October 1, 2003 with a Lifetime Benefit Period and No Inflation**

	Calendar Year	Actual or Projected Experience using Current Assumptions						Cumulative LR with Interest
		A Earned Premium <sup>[1]</sup>	B Incurred Claims <sup>[2]</sup>	C Paid Claims <sup>[2]</sup>	D Claim Reserves <sup>[2]</sup>	E = B / A Incurred Loss Ratio	F End of Year Lives	G Actual (Column E) with Max. Val. Interest
Historical Experience	2000	0	0	0	0	0%	0	0%
	2001	0	0	0	0	0%	0	0%
	2002	0	0	0	0	0%	0	0%
	2003	35,658	0	0	0	0%	114	0%
	2004	579,366	0	0	0	0%	482	0%
	2005	1,275,370	0	0	0	0%	865	0%
	2006	1,978,701	346,403	3,900	348,579	18%	1,220	9%
	2007	2,638,876	24,685	172,044	210,631	1%	1,495	6%
	2008	3,136,267	387,985	115,647	495,327	12%	1,714	8%
	2009	3,456,635	703,072	182,134	1,040,163	20%	1,794	11%
	2010	3,693,348	354,382	211,690	1,219,463	10%	1,877	11%
	2011	3,958,178	296,835	232,742	1,313,833	7%	2,003	10%
	2012	4,379,051	1,257,611	250,093	2,371,948	29%	2,145	13%
	2013	4,406,084	149,224	442,278	2,130,178	3%	2,115	12%
	2014	4,265,720	2,034,797	571,251	3,676,373	48%	2,072	16%
	2015	4,138,015	1,875,806	905,066	4,773,781	45%	2,046	18%
	2016	3,928,662	1,757,085	1,252,174	4,445,806	45%	1,999	20%
Projected Future Experience (60 Years)	2017	4,099,543	1,749,639	1,240,144	4,048,126	43%	1,968	22%
	2018	4,021,746	1,995,026	1,312,539	4,603,835	50%	1,937	24%
	2019	3,942,296	2,259,244	1,667,763	5,226,610	57%	1,905	25%
	2020	3,860,219	2,523,405	1,987,311	5,897,163	65%	1,871	27%
	2021	3,774,731	2,788,006	2,233,662	6,602,191	74%	1,836	30%
	2022	3,685,136	3,046,713	2,489,056	7,327,252	83%	1,799	32%
	2023	3,591,294	3,306,811	2,750,876	8,067,683	92%	1,760	34%
	2024	3,493,206	3,570,168	3,017,879	8,821,882	102%	1,718	36%
	2025	3,390,981	3,840,334	3,288,881	9,593,018	113%	1,675	38%
	2026	3,284,926	4,113,810	3,564,244	10,380,391	125%	1,629	41%
	2027	3,175,396	4,410,703	3,848,452	11,199,260	139%	1,581	43%
	2028	3,062,120	4,730,098	4,145,660	12,060,064	154%	1,531	45%
	2029	2,944,794	5,043,167	4,452,985	12,946,979	171%	1,478	48%
	2030	2,823,672	5,354,293	4,766,909	13,851,881	190%	1,423	50%
	2031	2,699,059	5,652,961	5,082,708	14,760,534	209%	1,365	53%
	2032	2,571,327	5,921,131	5,392,705	15,647,776	230%	1,305	56%
	2033	2,440,909	6,152,295	5,688,974	16,489,317	252%	1,243	58%
	2034	2,308,142	6,343,320	5,964,137	17,264,635	275%	1,180	61%
	2035	2,173,855	6,481,885	6,210,020	17,948,490	298%	1,115	63%
	2036	2,038,493	6,559,942	6,418,093	18,515,549	322%	1,049	66%
	2037	1,902,726	6,579,372	6,581,795	18,948,510	346%	983	68%
	2038	1,767,680	6,547,524	6,697,944	19,240,434	370%	917	70%
	2039	1,633,673	6,451,718	6,762,142	19,375,755	395%	852	72%
	2040	1,502,482	6,286,260	6,768,916	19,338,323	418%	787	74%
	2041	1,374,481	6,068,885	6,717,436	19,130,574	442%	724	76%
	2042	1,250,560	5,803,474	6,609,088	18,757,554	464%	662	78%
	2043	1,131,646	5,496,686	6,446,533	18,228,505	486%	603	79%
	2044	1,018,391	5,159,004	6,234,541	17,558,730	507%	546	81%
	2045	911,412	4,802,910	5,979,476	16,770,126	527%	492	82%
	2046	811,222	4,435,329	5,688,470	15,884,889	547%	442	83%
	2047	718,229	4,064,332	5,369,265	14,926,065	566%	394	84%
	2048	632,639	3,701,826	5,030,436	13,920,639	585%	350	85%
	2049	554,489	3,349,747	4,679,823	12,890,196	604%	310	86%
	2050	483,589	3,010,780	4,323,740	11,853,109	623%	273	86%
	2051	419,920	2,689,555	3,968,102	10,826,870	640%	239	87%
	2052-2056	1,370,399	9,414,055	14,866,953	40,060,726	687%	801	89%
	2057-2061	613,632	4,726,670	8,269,470	21,857,632	770%	374	90%
	2062-2066	262,379	2,181,190	4,155,773	10,815,301	831%	163	90%
	2067-2071	108,338	936,118	1,925,239	4,943,497	864%	67	90%
	2072-2076	41,747	357,203	821,560	2,080,260	856%	24	90%

[1] Actual earned premium increases from the history to projection because of differences in the treatment of waiver of premium. Historical data reduced earned premium for waiver, whereas projections treat waiver as an increase to claims with no impact on premium. The difference in the treatment of waiver has an immaterial impact on the lifetime loss ratio.

[2] Incurred Claims are discounted to the year of incurral, whereas Paid Claims and Claim Reserves are calendar year values that are not discounted to the date of incurral.

**Attachment 14B**  
**Massachusetts Mutual Life Insurance Company**  
**Actual and Projected Experience by Calendar Year**  
**Nationwide Experience - After Requested Rate Increase**  
**Lifetime-Pay Policy Forms Issued On or After October 1, 2003 with a Lifetime Benefit Period and No Inflation**

	Calendar Year	Actual or Projected Experience using Current Assumptions						Cumulative LR with Interest
		A  Earned Premium <sup>[1]</sup>	B  Incurred Claims <sup>[2]</sup>	C  Paid Claims <sup>[2]</sup>	D  Claim Reserves <sup>[2]</sup>	E = B / A  Incurred Loss Ratio	F  End of Year Lives	G  Actual (Column E) with Max. Val. Interest
Historical Experience	2000	0	0	0	0	0%	0	0%
	2001	0	0	0	0	0%	0	0%
	2002	0	0	0	0	0%	0	0%
	2003	35,658	0	0	0	0%	114	0%
	2004	579,366	0	0	0	0%	482	0%
	2005	1,275,370	0	0	0	0%	865	0%
	2006	1,978,701	346,403	3,900	348,579	18%	1,220	9%
	2007	2,638,876	24,685	172,044	210,631	1%	1,495	6%
	2008	3,136,267	387,985	115,647	495,327	12%	1,714	8%
	2009	3,456,635	703,072	182,134	1,040,163	20%	1,794	11%
	2010	3,693,348	354,382	211,690	1,219,463	10%	1,877	11%
	2011	3,958,178	296,835	232,742	1,313,833	7%	2,003	10%
	2012	4,379,051	1,257,611	250,093	2,371,948	29%	2,145	13%
	2013	4,406,084	149,224	442,278	2,130,178	3%	2,115	12%
	2014	4,265,720	2,034,797	571,251	3,676,373	48%	2,072	16%
	2015	4,138,015	1,875,806	905,066	4,773,781	45%	2,046	18%
	2016	3,928,662	1,757,085	1,252,174	4,445,806	45%	1,999	20%
Projected Future Experience (60 Years)	2017	4,099,543	1,749,639	1,240,144	4,048,126	43%	1,968	22%
	2018	4,021,746	1,995,026	1,312,539	4,603,835	50%	1,937	24%
	2019	4,669,045	2,094,564	1,633,695	5,094,934	45%	1,786	25%
	2020	5,308,377	2,153,191	1,871,194	5,502,683	41%	1,755	26%
	2021	5,190,162	2,375,259	2,037,132	5,977,488	46%	1,722	27%
	2022	5,066,267	2,591,573	2,220,328	6,497,401	51%	1,687	28%
	2023	4,936,545	2,808,812	2,416,179	7,051,492	57%	1,650	30%
	2024	4,801,011	3,028,359	2,621,749	7,632,983	63%	1,612	31%
	2025	4,659,836	3,253,673	2,834,557	8,240,977	70%	1,571	33%
	2026	4,513,463	3,481,661	3,053,998	8,872,023	77%	1,528	34%
	2027	4,362,373	3,729,250	3,283,206	9,536,692	85%	1,484	36%
	2028	4,206,189	3,995,538	3,525,199	10,241,809	95%	1,436	37%
	2029	4,044,484	4,255,956	3,777,121	10,972,172	105%	1,387	39%
	2030	3,877,592	4,514,299	4,035,585	11,719,569	116%	1,335	41%
	2031	3,705,924	4,762,139	4,296,326	12,471,332	129%	1,281	42%
	2032	3,529,971	4,984,146	4,552,597	13,205,725	141%	1,225	44%
	2033	3,350,318	5,174,710	4,797,511	13,901,816	154%	1,167	46%
	2034	3,167,400	5,332,234	5,024,915	14,542,836	168%	1,108	48%
	2035	2,982,371	5,446,103	5,227,994	15,107,742	183%	1,047	49%
	2036	2,795,833	5,509,042	5,399,499	15,574,977	197%	986	51%
	2037	2,608,705	5,523,257	5,533,974	15,930,303	212%	924	53%
	2038	2,422,544	5,495,008	5,628,817	16,168,213	227%	862	54%
	2039	2,237,804	5,413,619	5,680,426	16,275,840	242%	800	56%
	2040	2,056,894	5,274,415	5,684,314	16,239,827	256%	740	57%
	2041	1,880,367	5,092,524	5,639,876	16,062,581	271%	680	58%
	2042	1,709,460	4,870,777	5,548,280	15,748,261	285%	623	59%
	2043	1,545,464	4,615,360	5,411,876	15,305,043	299%	567	61%
	2044	1,389,285	4,334,631	5,234,675	14,745,737	312%	514	61%
	2045	1,241,792	4,038,479	5,021,909	14,088,205	325%	464	62%
	2046	1,103,705	3,732,716	4,779,423	13,350,682	338%	416	63%
	2047	975,573	3,424,058	4,513,611	12,552,161	351%	372	64%
	2048	857,725	3,122,819	4,231,639	11,715,294	364%	330	64%
	2049	750,183	2,830,092	3,939,976	10,857,765	377%	292	65%
	2050	652,703	2,547,930	3,643,756	9,994,521	390%	258	65%
	2051	565,262	2,280,351	3,347,830	9,140,004	403%	226	66%
	2052-2056	1,828,279	8,031,988	12,594,732	33,962,357	439%	758	67%
	2057-2061	800,804	4,091,517	7,076,046	18,718,794	511%	356	68%
	2062-2066	333,129	1,926,203	3,606,612	9,394,856	578%	157	68%
	2067-2071	133,860	846,866	1,701,469	4,374,334	633%	64	68%
	2072-2076	50,388	330,371	740,847	1,878,914	656%	24	68%

[1] Actual earned premium increases from the history to projection because of differences in the treatment of waiver of premium. Historical data reduced earned premium for waiver, whereas projections treat waiver as an increase to claims with no impact on premium. The difference in the treatment of waiver has an immaterial impact on the lifetime loss ratio.

[2] Incurred Claims are discounted to the year of incurral, whereas Paid Claims and Claim Reserves are calendar year values that are not discounted to the date of incurral.

**Attachment 14C**  
**Massachusetts Mutual Life Insurance Company**  
**Actual and Projected Experience by Calendar Year**  
**Nationwide Experience - After Requested Rate Increase without RBO, CBUL, and Adverse Selection**  
**Lifetime-Pay Policy Forms Issued On or After October 1, 2003 with a Lifetime Benefit Period and No Inflation**

	Calendar Year	Actual or Projected Experience using Current Assumptions						Cumulative LR with Interest
		A  Earned Premium <sup>[1]</sup>	B  Incurred Claims <sup>[2]</sup>	C  Paid Claims <sup>[2]</sup>	D  Claim Reserves <sup>[2]</sup>	E = B / A  Incurred Loss Ratio	F  End of Year Lives	G  Actual (Column E) with Max. Val. Interest
Historical Experience	2000	0	0	0	0	0%	0	0%
	2001	0	0	0	0	0%	0	0%
	2002	0	0	0	0	0%	0	0%
	2003	35,658	0	0	0	0%	114	0%
	2004	579,366	0	0	0	0%	482	0%
	2005	1,275,370	0	0	0	0%	865	0%
	2006	1,978,701	346,403	3,900	348,579	18%	1,220	9%
	2007	2,638,876	24,685	172,044	210,631	1%	1,495	6%
	2008	3,136,267	387,985	115,647	495,327	12%	1,714	8%
	2009	3,456,635	703,072	182,134	1,040,163	20%	1,794	11%
	2010	3,693,348	354,382	211,690	1,219,463	10%	1,877	11%
	2011	3,958,178	296,835	232,742	1,313,833	7%	2,003	10%
	2012	4,379,051	1,257,611	250,093	2,371,948	29%	2,145	13%
	2013	4,406,084	149,224	442,278	2,130,178	3%	2,115	12%
	2014	4,265,720	2,034,797	571,251	3,676,373	48%	2,072	16%
	2015	4,138,015	1,875,806	905,066	4,773,781	45%	2,046	18%
	2016	3,928,662	1,757,085	1,252,174	4,445,806	45%	1,999	20%
Projected Future Experience (60 Years)	2017	4,099,543	1,749,639	1,240,144	4,048,126	43%	1,968	22%
	2018	4,021,746	1,995,026	1,312,539	4,603,835	50%	1,937	24%
	2019	5,357,339	2,314,000	1,678,640	5,270,866	43%	1,905	25%
	2020	6,685,824	2,642,922	2,024,070	6,027,018	40%	1,871	26%
	2021	6,536,059	2,913,283	2,294,541	6,800,870	45%	1,836	28%
	2022	6,379,113	3,176,574	2,569,703	7,580,845	50%	1,799	29%
	2023	6,214,854	3,440,931	2,847,734	8,365,264	55%	1,760	30%
	2024	6,043,315	3,708,128	3,128,071	9,154,788	61%	1,718	32%
	2025	5,864,744	3,981,863	3,410,091	9,954,474	68%	1,675	33%
	2026	5,679,719	4,258,844	3,694,662	10,765,250	75%	1,629	35%
	2027	5,488,841	4,559,772	3,986,786	11,604,117	83%	1,581	37%
	2028	5,291,639	4,883,590	4,291,009	12,482,751	92%	1,531	38%
	2029	5,087,567	5,200,544	4,604,549	13,385,542	102%	1,478	40%
	2030	4,877,031	5,515,212	4,923,966	14,304,707	113%	1,423	42%
	2031	4,660,545	5,816,939	5,244,599	15,226,148	125%	1,365	44%
	2032	4,438,704	6,087,164	5,558,717	16,124,370	137%	1,305	46%
	2033	4,212,231	6,319,416	5,858,340	16,974,835	150%	1,243	48%
	2034	3,981,639	6,510,437	6,136,014	17,756,716	164%	1,180	49%
	2035	3,748,400	6,647,636	6,383,436	18,444,319	177%	1,115	51%
	2036	3,513,247	6,722,938	6,591,958	19,011,938	191%	1,049	53%
	2037	3,277,325	6,738,377	6,754,960	19,442,109	206%	983	55%
	2038	3,042,594	6,701,445	6,869,248	19,727,884	220%	917	57%
	2039	2,809,626	6,599,220	6,930,382	19,853,484	235%	852	58%
	2040	2,581,413	6,426,092	6,932,846	19,802,668	249%	787	60%
	2041	2,358,686	6,200,176	6,875,868	19,578,112	263%	724	61%
	2042	2,143,011	5,925,494	6,760,929	19,185,152	277%	662	62%
	2043	1,936,034	5,608,847	6,590,801	18,633,361	290%	603	63%
	2044	1,738,898	5,261,063	6,370,418	17,938,562	303%	546	64%
	2045	1,552,727	4,894,997	6,106,356	17,123,353	315%	492	65%
	2046	1,378,447	4,517,700	5,805,960	16,210,555	328%	442	66%
	2047	1,216,738	4,137,348	5,477,163	15,223,766	340%	394	67%
	2048	1,068,077	3,766,028	5,128,727	14,190,530	353%	350	68%
	2049	932,465	3,405,794	4,768,671	13,132,941	365%	310	68%
	2050	809,622	3,059,338	4,403,445	12,069,762	378%	273	69%
	2051	699,527	2,731,344	4,039,084	11,018,814	390%	239	69%
	2052-2056	2,244,556	9,545,350	15,110,614	40,710,467	425%	801	70%
	2057-2061	963,489	4,779,801	8,383,566	22,154,904	496%	374	71%
	2062-2066	390,466	2,200,748	4,203,128	10,936,435	564%	163	71%
	2067-2071	152,606	942,899	1,943,261	4,988,937	618%	67	71%
	2072-2076	55,914	359,385	827,956	2,096,162	643%	24	71%

[1] Actual earned premium increases from the history to projection because of differences in the treatment of waiver of premium. Historical data reduced earned premium for waiver, whereas projections treat waiver as an increase to claims with no impact on premium. The difference in the treatment of waiver has an immaterial impact on the lifetime loss ratio.

[2] Incurred Claims are discounted to the year of incurral, whereas Paid Claims and Claim Reserves are calendar year values that are not discounted to the date of incurral.

**Attachment 14D**  
**Massachusetts Mutual Life Insurance Company**  
**Actual and Projected Experience by Calendar Year**  
**Nationwide Experience Restated to Proposed Increase From Inception**  
**Lifetime-Pay Policy Forms Issued On or After October 1, 2003 with a Lifetime Benefit Period and No Inflation**

	Calendar Year	Actual or Projected Experience using Current Assumptions						Cumulative LR with Interest
		A Earned Premium <sup>[1]</sup>	B Incurred Claims <sup>[2]</sup>	C Paid Claims <sup>[2]</sup>	D Claim Reserves <sup>[2]</sup>	E = B / A Incurred Loss Ratio	F End of Year Lives	G Actual (Column E) with Max. Val. Interest
Historical Experience	2000	0	0	0	0	0%	0	0%
	2001	0	0	0	0	0%	0	0%
	2002	0	0	0	0	0%	0	0%
	2003	68,252	0	0	0	0%	114	0%
	2004	1,105,014	0	0	0	0%	482	0%
	2005	2,423,198	0	0	0	0%	865	0%
	2006	3,736,099	346,403	3,900	348,579	9%	1,220	5%
	2007	4,974,647	24,685	172,044	210,631	0%	1,495	3%
	2008	5,887,005	387,985	115,647	495,327	7%	1,714	4%
	2009	6,388,336	703,072	182,134	1,040,163	11%	1,794	6%
	2010	6,698,425	354,382	211,690	1,219,463	5%	1,877	6%
	2011	7,045,194	296,835	232,742	1,313,833	4%	2,003	5%
	2012	7,605,373	1,257,611	250,093	2,371,948	17%	2,145	7%
	2013	7,593,141	149,224	442,278	2,130,178	2%	2,115	6%
	2014	7,365,373	2,034,797	571,251	3,676,373	28%	2,072	9%
	2015	7,148,614	1,875,806	905,066	4,773,781	26%	2,046	10%
	2016	6,786,060	1,757,085	1,252,174	4,445,806	26%	1,999	11%
Projected Future Experience (60 Years)	2017	7,102,727	1,844,531	1,250,932	4,125,049	26%	1,968	12%
	2018	6,967,859	2,098,800	1,348,065	4,745,872	30%	1,937	13%
	2019	6,829,371	2,371,637	1,725,890	5,424,268	35%	1,905	15%
	2020	6,685,824	2,642,922	2,065,298	6,141,854	40%	1,871	16%
	2021	6,536,059	2,913,283	2,326,051	6,886,189	45%	1,836	17%
	2022	6,379,113	3,176,574	2,593,643	7,643,704	50%	1,799	18%
	2023	6,214,854	3,440,931	2,865,830	8,411,118	55%	1,760	20%
	2024	6,043,315	3,708,128	3,141,674	9,187,835	61%	1,718	21%
	2025	5,864,744	3,981,863	3,420,245	9,977,941	68%	1,675	22%
	2026	5,679,719	4,258,844	3,702,146	10,781,639	75%	1,629	24%
	2027	5,488,841	4,559,772	3,992,193	11,615,383	83%	1,581	25%
	2028	5,291,639	4,883,590	4,294,819	12,490,403	92%	1,531	26%
	2029	5,087,567	5,200,544	4,607,170	13,390,706	102%	1,478	28%
	2030	4,877,031	5,515,212	4,925,740	14,308,186	113%	1,423	29%
	2031	4,660,545	5,816,939	5,245,791	15,228,495	125%	1,365	31%
	2032	4,438,704	6,087,164	5,559,520	16,125,955	137%	1,305	32%
	2033	4,212,231	6,319,416	5,858,882	16,975,905	150%	1,243	34%
	2034	3,981,639	6,510,437	6,136,380	17,757,439	164%	1,180	35%
	2035	3,748,400	6,647,636	6,383,684	18,444,806	177%	1,115	37%
	2036	3,513,247	6,722,938	6,592,126	19,012,266	191%	1,049	38%
	2037	3,277,325	6,738,377	6,755,073	19,442,330	206%	983	40%
	2038	3,042,594	6,701,445	6,869,325	19,728,032	220%	917	41%
	2039	2,809,626	6,599,220	6,930,434	19,853,583	235%	852	42%
	2040	2,581,413	6,426,092	6,932,881	19,802,733	249%	787	43%
	2041	2,358,686	6,200,176	6,875,892	19,578,154	263%	724	44%
	2042	2,143,011	5,925,494	6,760,945	19,185,179	277%	662	45%
	2043	1,936,034	5,608,847	6,590,812	18,633,378	290%	603	46%
	2044	1,738,898	5,261,063	6,370,425	17,938,572	303%	546	47%
	2045	1,552,727	4,894,997	6,106,361	17,123,359	315%	492	48%
	2046	1,378,447	4,517,700	5,805,963	16,210,557	328%	442	48%
	2047	1,216,738	4,137,348	5,477,165	15,223,766	340%	394	49%
	2048	1,068,077	3,766,028	5,128,728	14,190,530	353%	350	50%
	2049	932,465	3,405,794	4,768,671	13,132,941	365%	310	50%
	2050	809,622	3,059,338	4,403,445	12,069,762	378%	273	50%
	2051	699,527	2,731,344	4,039,084	11,018,814	390%	239	51%
	2052-2056	2,244,556	9,545,350	15,110,614	40,710,467	425%	801	52%
	2057-2061	963,489	4,779,801	8,383,566	22,154,904	496%	374	52%
	2062-2066	390,466	2,200,748	4,203,128	10,936,435	564%	163	52%
	2067-2071	152,606	942,899	1,943,261	4,988,937	618%	67	52%
	2072-2076	55,914	359,385	827,956	2,096,162	643%	24	52%

[1] Actual earned premium increases from the history to projection because of differences in the treatment of waiver of premium. Historical data reduced earned premium for waiver, whereas projections treat waiver as an increase to claims with no impact on premium. The difference in the treatment of waiver has an immaterial impact on the lifetime loss ratio.

[2] Incurred Claims are discounted to the year of incurral, whereas Paid Claims and Claim Reserves are calendar year values that are not discounted to the date of incurral.

**Attachment 14E**  
**Massachusetts Mutual Life Insurance Company**  
**Projected Experience by Calendar Year**  
**Nationwide Expected Experience**  
**Lifetime-Pay Policy Forms Issued On or After October 1, 2003 with a Lifetime Benefit Period and No Inflation**

	Calendar Year	Projected Experience using Pricing Assumptions						Cumulative LR with Interest
		A Earned Premium	B Incurred Claims <sup>[1]</sup>	C Paid Claims <sup>[1]</sup>	D Claim Reserves <sup>[1]</sup>	E = B / A Incurred Loss Ratio	F End of Year Lives	G Actual (Column E) with Max. Val. Interest
Projected Experience	2000	0	0	0	0	0%	0	0%
	2001	0	0	0	0	0%	0	0%
	2002	0	0	0	0	0%	0	0%
	2003	35,586	632	84	558	2%	114	2%
	2004	578,289	12,348	1,755	11,352	2%	479	2%
	2005	1,261,725	38,706	9,177	41,835	3%	850	3%
	2006	1,923,046	89,664	27,849	107,117	5%	1,188	4%
	2007	2,541,980	168,445	64,725	220,021	7%	1,438	5%
	2008	3,022,628	272,635	124,410	387,071	9%	1,650	6%
	2009	3,331,213	404,273	209,912	614,639	12%	1,726	8%
	2010	3,524,625	537,213	320,070	883,948	15%	1,794	9%
	2011	3,758,895	658,782	445,389	1,171,728	18%	1,894	11%
	2012	4,134,991	774,228	575,771	1,467,374	19%	2,007	12%
	2013	4,120,692	874,221	703,827	1,755,505	21%	1,939	13%
	2014	3,967,269	959,250	823,737	2,026,452	24%	1,874	14%
	2015	3,823,659	1,040,598	932,562	2,283,642	27%	1,813	15%
	2016	3,685,271	1,125,097	1,032,443	2,535,139	31%	1,753	16%
	2017	3,549,575	1,216,384	1,129,130	2,789,424	34%	1,694	18%
	2018	3,414,313	1,303,266	1,225,568	3,041,838	38%	1,635	19%
	2019	3,277,407	1,389,463	1,324,912	3,292,691	42%	1,575	20%
	2020	3,137,332	1,469,032	1,422,381	3,536,926	47%	1,513	21%
	2021	2,996,357	1,531,889	1,508,648	3,762,165	51%	1,452	22%
	2022	2,857,389	1,589,037	1,587,951	3,970,402	56%	1,391	23%
	2023	2,720,112	1,648,728	1,661,935	4,170,267	61%	1,331	25%
	2024	2,584,392	1,710,966	1,733,434	4,366,936	66%	1,271	26%
	2025	2,450,531	1,769,016	1,802,341	4,557,725	72%	1,212	27%
	2026	2,318,590	1,827,897	1,868,839	4,745,474	79%	1,154	28%
	2027	2,188,500	1,887,085	1,934,183	4,931,760	86%	1,096	29%
	2028	2,060,061	1,938,987	1,999,132	5,110,698	94%	1,039	30%
	2029	1,933,864	1,975,665	2,060,208	5,270,770	102%	983	31%
	2030	1,810,251	2,006,612	2,113,208	5,413,239	111%	927	32%
	2031	1,689,427	2,035,538	2,158,274	5,541,957	120%	873	33%
	2032	1,571,535	2,049,372	2,195,447	5,647,887	130%	819	34%
	2033	1,456,785	2,050,182	2,221,889	5,727,053	141%	766	35%
	2034	1,345,634	2,040,860	2,235,197	5,779,552	152%	715	36%
	2035	1,238,382	2,019,633	2,236,662	5,803,416	163%	665	37%
	2036	1,135,330	1,985,662	2,224,361	5,796,560	175%	616	38%
	2037	1,036,643	1,943,460	2,198,612	5,761,673	187%	569	39%
	2038	942,535	1,889,015	2,161,347	5,696,240	200%	524	39%
	2039	853,207	1,823,370	2,112,604	5,598,935	214%	480	40%
	2040	768,896	1,749,905	2,052,762	5,472,038	228%	438	41%
	2041	689,809	1,664,253	1,980,708	5,313,639	241%	398	41%
	2042	616,147	1,571,928	1,896,710	5,127,117	255%	361	42%
	2043	547,961	1,476,128	1,803,563	4,917,696	269%	325	42%
	2044	485,111	1,382,093	1,704,007	4,693,522	285%	292	43%
	2045	427,632	1,276,558	1,599,266	4,447,923	299%	262	43%
	2046	375,453	1,169,756	1,488,176	4,185,768	312%	233	44%
	2047	328,373	1,067,298	1,374,484	3,915,196	325%	207	44%
	2048	286,117	970,673	1,262,149	3,643,297	339%	183	44%
	2049	248,437	878,726	1,152,623	3,374,228	354%	161	45%
	2050	215,065	790,822	1,045,322	3,110,103	368%	141	45%
	2051	185,663	707,733	942,831	2,853,205	381%	124	45%
	2052-2056	601,321	2,497,971	3,398,380	10,813,120	415%	413	46%
	2057-2061	271,607	1,309,707	1,817,045	6,388,516	482%	197	46%
	2062-2066	115,694	647,470	918,102	3,609,147	560%	89	46%
	2067-2071	45,243	285,656	417,052	1,904,402	631%	38	46%
	2072-2076	15,566	106,403	166,075	909,576	684%	14	46%

[1] Incurred Claims are discounted to the year of incurral, whereas Paid Claims and Claim Reserves are calendar year values that are not discounted to the date of incurral.

**Attachment 14F**  
**Massachusetts Mutual Life Insurance Company**  
**Actual and Projected Experience by Calendar Year**  
**Nationwide Experience - Before Requested Rate Increase**  
**Lifetime-Pay Policy Forms Issued On or After October 1, 2003 with a Lifetime Benefit Period and No Inflation**

	Calendar Year	Actual or Projected Experience using Original Pricing Assumptions						Cumulative LR with Interest
		A Earned Premium <sup>[1]</sup>	B Incurred Claims <sup>[2]</sup>	C Paid Claims <sup>[2][3]</sup>	D Claim Reserves <sup>[2][3]</sup>	E = B / A Incurred Loss Ratio	F End of Year Lives	G Actual (Column E) with Max. Val. Interest
Historical Experience	2000	0	0	0	0	0%	0	0%
	2001	0	0	0	0	0%	0	0%
	2002	0	0	0	0	0%	0	0%
	2003	35,658	0	0	0	0%	114	0%
	2004	579,366	0	0	0	0%	482	0%
	2005	1,275,370	0	0	0	0%	865	0%
	2006	1,978,701	346,403	3,900	348,579	18%	1,220	9%
	2007	2,638,876	24,685	172,044	210,631	1%	1,495	6%
	2008	3,136,267	387,985	115,647	495,327	12%	1,714	8%
	2009	3,456,635	703,072	182,134	1,040,163	20%	1,794	11%
	2010	3,693,348	354,382	211,690	1,219,463	10%	1,877	11%
	2011	3,958,178	296,835	232,742	1,313,833	7%	2,003	10%
	2012	4,379,051	1,257,611	250,093	2,371,948	29%	2,145	13%
	2013	4,406,084	149,224	442,278	2,130,178	3%	2,115	12%
	2014	4,265,720	2,034,797	571,251	3,676,373	48%	2,072	16%
	2015	4,138,015	1,875,806	905,066	4,773,781	45%	2,046	18%
	2016	3,928,662	1,757,085	1,252,174	4,445,806	45%	1,999	20%
Projected Future Experience (60 Years)	2017	3,944,050	1,763,369	0	0	45%	1,925	22%
	2018	3,773,127	1,872,466	0	0	50%	1,852	24%
	2019	3,600,495	1,984,671	0	0	55%	1,777	25%
	2020	3,424,235	2,077,132	0	0	61%	1,699	27%
	2021	3,248,011	2,138,231	0	0	66%	1,623	28%
	2022	3,076,286	2,187,390	0	0	71%	1,547	30%
	2023	2,908,729	2,235,497	0	0	77%	1,473	31%
	2024	2,745,108	2,283,715	0	0	83%	1,399	33%
	2025	2,585,581	2,324,254	0	0	90%	1,327	34%
	2026	2,430,267	2,359,792	0	0	97%	1,256	35%
	2027	2,279,083	2,391,597	0	0	105%	1,186	36%
	2028	2,131,645	2,416,039	0	0	113%	1,118	38%
	2029	1,988,451	2,423,360	0	0	122%	1,051	39%
	2030	1,849,728	2,422,312	0	0	131%	986	40%
	2031	1,715,734	2,418,442	0	0	141%	922	41%
	2032	1,586,531	2,397,903	0	0	151%	860	42%
	2033	1,462,179	2,362,581	0	0	162%	800	43%
	2034	1,342,936	2,318,281	0	0	173%	742	44%
	2035	1,228,962	2,262,462	0	0	184%	686	45%
	2036	1,120,552	2,192,552	0	0	196%	632	46%
	2037	1,017,668	2,115,907	0	0	208%	580	47%
	2038	920,453	2,031,234	0	0	221%	530	48%
	2039	829,015	1,938,844	0	0	234%	483	48%
	2040	743,479	1,837,745	0	0	247%	438	49%
	2041	663,905	1,729,167	0	0	260%	396	50%
	2042	590,263	1,616,396	0	0	274%	357	50%
	2043	522,609	1,502,475	0	0	287%	320	51%
	2044	460,736	1,394,430	0	0	303%	285	51%
	2045	404,565	1,278,338	0	0	316%	254	51%
	2046	353,912	1,162,085	0	0	328%	225	52%
	2047	308,428	1,051,217	0	0	341%	198	52%
	2048	267,802	948,333	0	0	354%	174	52%
	2049	231,739	851,754	0	0	368%	152	52%
	2050	199,945	759,102	0	0	380%	132	53%
	2051	172,051	672,277	0	0	391%	115	53%
	2052-2056	552,910	2,289,005	0	0	414%	376	53%
	2057-2061	247,809	1,115,552	0	0	450%	171	54%
	2062-2066	106,571	525,449	0	0	493%	75	54%
	2067-2071	42,632	238,599	0	0	560%	30	54%
	2072-2076	14,703	92,294	0	0	628%	10	54%

[1] Actual earned premium increases from the history to projection because of differences in the treatment of waiver of premium. Historical data reduced earned premium for waiver, whereas projections treat waiver as an increase to claims with no impact on premium. The difference in the treatment of waiver has an immaterial impact on the lifetime loss ratio.

[2] Incurred Claims are discounted to the year of incurral, whereas Paid Claims and Claim Reserves are calendar year values that are not discounted to the date of incurral.

[3] Projected values for paid claims and claim reserves are not readily available in the model used to project original pricing assumptions based on actual historical experience.

**Attachment 15A**  
**Massachusetts Mutual Life Insurance Company**  
**Actual and Projected Experience by Calendar Year**  
**Nationwide Experience - Before Requested Rate Increase**  
**Lifetime-Pay Policy Forms Issued On or After October 1, 2003 with a Lifetime Benefit Period and Auto Inflation**

	Calendar Year	Actual or Projected Experience using Current Assumptions						Cumulative LR with Interest
		A Earned Premium <sup>[1]</sup>	B Incurred Claims <sup>[2]</sup>	C Paid Claims <sup>[2]</sup>	D Claim Reserves <sup>[2]</sup>	E = B / A Incurred Loss Ratio	F End of Year Lives	G Actual (Column E) with Max. Val. Interest
Historical Experience	2000	0	0	0	0	0%	0	0%
	2001	0	0	0	0	0%	0	0%
	2002	0	0	0	0	0%	0	0%
	2003	456,706	0	0	0	0%	1,719	0%
	2004	9,404,890	0	0	0	0%	7,678	0%
	2005	24,170,959	75,796	4,200	72,983	0%	14,081	0%
	2006	32,938,147	1,127,516	82,195	1,140,534	3%	16,829	2%
	2007	39,264,400	3,514,168	223,222	4,516,103	9%	19,117	4%
	2008	46,254,071	3,031,188	669,165	7,020,479	7%	21,274	5%
	2009	49,438,982	3,027,259	1,031,859	9,207,970	6%	21,901	5%
	2010	51,744,807	3,429,813	1,229,487	11,649,145	7%	22,379	6%
	2011	53,835,655	4,771,029	1,961,110	14,778,628	9%	22,973	6%
	2012	57,382,229	3,770,638	2,716,947	16,210,497	7%	23,744	6%
	2013	57,583,295	8,863,428	3,542,925	22,034,790	15%	23,482	7%
	2014	56,679,042	11,343,367	4,605,690	29,456,456	20%	23,223	8%
	2015	55,868,640	11,423,542	5,728,283	36,054,090	20%	22,987	10%
	2016	55,150,182	9,496,457	7,006,668	34,707,994	17%	22,755	10%
Projected Future Experience (60 Years)	2017	55,843,281	16,077,274	9,615,098	34,184,370	29%	22,487	11%
	2018	55,216,234	19,538,731	11,004,059	41,709,218	35%	22,217	13%
	2019	54,585,878	23,724,034	14,990,291	50,789,233	43%	21,939	14%
	2020	53,940,946	28,453,233	19,140,370	61,476,913	53%	21,650	16%
	2021	53,271,836	33,818,149	23,058,883	73,889,500	63%	21,347	18%
	2022	52,568,676	39,902,306	27,582,014	88,184,022	76%	21,027	21%
	2023	51,826,909	46,809,943	32,767,828	104,568,215	90%	20,690	23%
	2024	51,042,837	54,636,659	38,688,211	123,278,787	107%	20,335	26%
	2025	50,212,546	63,493,804	45,419,334	144,593,669	126%	19,959	29%
	2026	49,333,253	73,475,722	53,055,343	168,797,442	149%	19,562	32%
	2027	48,401,508	85,330,691	61,826,719	196,710,409	176%	19,141	36%
	2028	47,407,594	99,161,819	71,970,094	229,035,369	209%	18,691	40%
	2029	46,341,382	114,513,379	83,579,035	265,930,111	247%	18,212	45%
	2030	45,197,879	131,494,841	96,722,020	307,598,055	291%	17,700	49%
	2031	43,972,813	149,991,956	111,435,731	354,093,237	341%	17,156	55%
	2032	42,662,640	169,524,165	127,642,910	405,058,991	397%	16,579	60%
	2033	41,265,092	189,891,226	145,219,574	460,052,731	460%	15,968	66%
	2034	39,779,418	210,748,378	163,995,534	518,443,637	530%	15,324	73%
	2035	38,206,485	231,509,282	183,699,533	579,264,692	606%	14,648	79%
	2036	36,549,312	251,631,011	203,979,607	641,331,719	688%	13,943	86%
	2037	34,813,307	270,761,300	224,460,285	703,457,090	778%	13,212	93%
	2038	33,006,007	288,434,263	244,740,933	764,359,237	874%	12,460	100%
	2039	31,138,990	303,795,322	264,319,198	822,367,306	976%	11,691	108%
	2040	29,224,350	315,992,955	282,590,765	875,519,474	1,081%	10,910	115%
	2041	27,276,973	324,853,349	299,004,010	922,194,679	1,191%	10,125	122%
	2042	25,312,620	330,337,214	313,110,982	961,151,709	1,305%	9,341	129%
	2043	23,348,762	332,475,905	324,573,078	991,498,325	1,424%	8,566	135%
	2044	21,403,220	330,953,336	333,062,424	1,012,333,108	1,546%	7,806	142%
	2045	19,493,944	325,803,640	338,318,223	1,023,034,526	1,671%	7,068	148%
	2046	17,638,148	317,260,465	340,199,232	1,023,349,203	1,799%	6,358	153%
	2047	15,852,041	305,960,033	338,733,059	1,013,639,025	1,930%	5,681	159%
	2048	14,149,804	292,161,454	334,038,051	994,417,411	2,065%	5,042	163%
	2049	12,543,497	276,252,386	326,309,903	966,405,376	2,202%	4,444	168%
	2050	11,042,028	258,411,355	315,765,757	930,300,928	2,340%	3,891	172%
	2051	9,652,577	239,416,031	302,739,975	887,270,986	2,480%	3,383	175%
	2052-2056	31,471,967	907,082,009	1,261,852,194	3,645,039,953	2,882%	10,896	187%
	2057-2061	13,147,001	490,527,102	804,694,017	2,270,221,073	3,731%	4,513	192%
	2062-2066	4,767,665	226,395,769	433,597,735	1,197,658,390	4,749%	1,640	194%
	2067-2071	1,590,980	92,012,623	203,656,844	552,045,204	5,783%	542	195%
	2072-2076	507,288	33,155,371	85,145,586	226,564,447	6,536%	170	195%

[1] Actual earned premium increases from the history to projection because of differences in the treatment of waiver of premium. Historical data reduced earned premium for waiver, whereas projections treat waiver as an increase to claims with no impact on premium. The difference in the treatment of waiver has an immaterial impact on the lifetime loss ratio.

[2] Incurred Claims are discounted to the year of incurral, whereas Paid Claims and Claim Reserves are calendar year values that are not discounted to the date of incurral.



**Attachment 15B**  
**Massachusetts Mutual Life Insurance Company**  
**Actual and Projected Experience by Calendar Year**  
**Nationwide Experience - After Requested Rate Increase**  
**Lifetime-Pay Policy Forms Issued On or After October 1, 2003 with a Lifetime Benefit Period and Auto Inflation**

	Calendar Year	Actual or Projected Experience using Current Assumptions						Cumulative LR with Interest
		A Earned Premium <sup>[1]</sup>	B Incurred Claims <sup>[2]</sup>	C Paid Claims <sup>[2]</sup>	D Claim Reserves <sup>[2]</sup>	E = B / A Incurred Loss Ratio	F End of Year Lives	G Actual (Column E) with Max. Val. Interest
Historical Experience	2000	0	0	0	0	0%	0	0%
	2001	0	0	0	0	0%	0	0%
	2002	0	0	0	0	0%	0	0%
	2003	456,706	0	0	0	0%	1,719	0%
	2004	9,404,890	0	0	0	0%	7,678	0%
	2005	24,170,959	75,796	4,200	72,983	0%	14,081	0%
	2006	32,938,147	1,127,516	82,195	1,140,534	3%	16,829	2%
	2007	39,264,400	3,514,168	223,222	4,516,103	9%	19,117	4%
	2008	46,254,071	3,031,188	669,165	7,020,479	7%	21,274	5%
	2009	49,438,982	3,027,259	1,031,859	9,207,970	6%	21,901	5%
	2010	51,744,807	3,429,813	1,229,487	11,649,145	7%	22,379	6%
	2011	53,835,655	4,771,029	1,961,110	14,778,628	9%	22,973	6%
	2012	57,382,229	3,770,638	2,716,947	16,210,497	7%	23,744	6%
	2013	57,583,295	8,863,428	3,542,925	22,034,790	15%	23,482	7%
	2014	56,679,042	11,343,367	4,605,690	29,456,456	20%	23,223	8%
	2015	55,868,640	11,423,542	5,728,283	36,054,090	20%	22,987	10%
	2016	55,150,182	9,496,457	7,006,668	34,707,994	17%	22,755	10%
Projected Future Experience (60 Years)	2017	55,843,281	16,077,274	9,615,098	34,184,370	29%	22,487	11%
	2018	55,216,234	19,538,731	11,004,059	41,709,218	35%	22,217	13%
	2019	66,945,699	21,229,721	14,503,821	48,763,719	32%	20,270	14%
	2020	78,079,639	22,769,869	17,459,863	55,314,797	29%	20,003	15%
	2021	77,113,569	27,020,589	20,094,633	63,669,231	35%	19,723	16%
	2022	76,098,245	31,832,620	23,310,738	73,848,021	42%	19,428	18%
	2023	75,027,306	37,288,274	27,129,390	85,935,064	50%	19,117	19%
	2024	73,895,427	43,462,042	31,587,107	100,054,973	59%	18,788	21%
	2025	72,697,000	50,437,571	36,725,505	116,378,009	69%	18,441	23%
	2026	71,428,058	58,287,352	42,607,150	135,088,567	82%	18,074	25%
	2027	70,083,591	67,601,228	49,405,707	156,800,654	96%	17,685	27%
	2028	68,649,522	78,457,086	57,301,648	182,037,696	114%	17,270	30%
	2029	67,111,131	90,491,652	66,363,248	210,894,347	135%	16,826	33%
	2030	65,461,082	103,787,387	76,637,343	243,503,961	159%	16,354	36%
	2031	63,693,047	118,253,688	88,145,598	279,888,365	186%	15,851	39%
	2032	61,801,777	133,513,083	100,821,208	319,752,547	216%	15,318	43%
	2033	59,783,830	149,407,614	114,561,810	362,738,045	250%	14,753	47%
	2034	57,637,968	165,667,268	129,230,186	408,342,693	287%	14,158	51%
	2035	55,365,319	181,828,765	144,610,441	455,800,195	328%	13,534	55%
	2036	52,970,134	197,469,076	160,424,724	504,178,440	373%	12,883	60%
	2037	50,460,117	212,315,357	176,378,133	552,546,472	421%	12,208	64%
	2038	47,846,064	226,007,086	192,157,360	599,903,711	472%	11,512	69%
	2039	45,144,639	237,880,251	207,370,568	644,948,525	527%	10,802	73%
	2040	42,373,284	247,271,020	221,546,709	686,152,397	584%	10,081	78%
	2041	39,553,489	254,051,171	234,257,391	722,258,237	642%	9,355	83%
	2042	36,708,085	258,191,666	245,155,423	752,304,794	703%	8,631	87%
	2043	33,862,362	259,722,778	253,979,618	775,606,123	767%	7,915	91%
	2044	31,042,227	258,401,817	260,477,602	791,469,856	832%	7,213	95%
	2045	28,273,783	254,264,216	264,450,478	799,426,554	899%	6,532	99%
	2046	25,582,083	247,493,265	265,792,206	799,291,145	967%	5,876	103%
	2047	22,990,766	238,585,577	264,527,880	791,355,481	1,038%	5,251	106%
	2048	20,520,494	227,747,084	260,753,139	776,030,343	1,110%	4,660	109%
	2049	18,188,905	215,282,243	254,623,801	753,887,561	1,184%	4,109	112%
	2050	16,009,071	201,332,698	246,312,233	725,480,617	1,258%	3,597	115%
	2051	13,991,561	186,501,454	236,080,934	691,723,568	1,333%	3,128	117%
	2052-2056	45,573,512	706,440,247	983,408,662	2,840,052,141	1,550%	10,080	124%
	2057-2061	18,971,201	382,214,212	626,891,362	1,768,322,852	2,015%	4,181	128%
	2062-2066	6,835,416	176,676,707	337,964,972	933,461,170	2,585%	1,522	129%
	2067-2071	2,257,858	72,006,023	158,954,317	430,928,327	3,189%	505	130%
	2072-2076	708,201	26,091,427	66,630,923	177,389,936	3,684%	159	130%

[1] Actual earned premium increases from the history to projection because of differences in the treatment of waiver of premium. Historical data reduced earned premium for waiver, whereas projections treat waiver as an increase to claims with no impact on premium. The difference in the treatment of waiver has an immaterial impact on the lifetime loss ratio.

[2] Incurred Claims are discounted to the year of incurral, whereas Paid Claims and Claim Reserves are calendar year values that are not discounted to the date of incurral.

**Attachment 15C**  
**Massachusetts Mutual Life Insurance Company**  
**Actual and Projected Experience by Calendar Year**  
**Nationwide Experience - After Requested Rate Increase without RBO, CBUL, and Adverse Selection**  
**Lifetime-Pay Policy Forms Issued On or After October 1, 2003 with a Lifetime Benefit Period and Auto Inflation**

	Calendar Year	Actual or Projected Experience using Current Assumptions						Cumulative LR with Interest
		A Earned Premium <sup>[1]</sup>	B Incurred Claims <sup>[2]</sup>	C Paid Claims <sup>[2]</sup>	D Claim Reserves <sup>[2]</sup>	E = B / A Incurred Loss Ratio	F End of Year Lives	G Actual (Column E) with Max. Val. Interest
Historical Experience	2000	0	0	0	0	0%	0	0%
	2001	0	0	0	0	0%	0	0%
	2002	0	0	0	0	0%	0	0%
	2003	456,706	0	0	0	0%	1,719	0%
	2004	9,404,890	0	0	0	0%	7,678	0%
	2005	24,170,959	75,796	4,200	72,983	0%	14,081	0%
	2006	32,938,147	1,127,516	82,195	1,140,534	3%	16,829	2%
	2007	39,264,400	3,514,168	223,222	4,516,103	9%	19,117	4%
	2008	46,254,071	3,031,188	669,165	7,020,479	7%	21,274	5%
	2009	49,438,982	3,027,259	1,031,859	9,207,970	6%	21,901	5%
	2010	51,744,807	3,429,813	1,229,487	11,649,145	7%	22,379	6%
	2011	53,835,655	4,771,029	1,961,110	14,778,628	9%	22,973	6%
	2012	57,382,229	3,770,638	2,716,947	16,210,497	7%	23,744	6%
	2013	57,583,295	8,863,428	3,542,925	22,034,790	15%	23,482	7%
	2014	56,679,042	11,343,367	4,605,690	29,456,456	20%	23,223	8%
	2015	55,868,640	11,423,542	5,728,283	36,054,090	20%	22,987	10%
	2016	55,150,182	9,496,457	7,006,668	34,707,994	17%	22,755	10%
Projected Future Experience (60 Years)	2017	55,843,281	16,077,274	9,615,098	34,184,370	29%	22,487	11%
	2018	55,216,234	19,538,731	11,004,059	41,709,218	35%	22,217	13%
	2019	80,248,679	24,060,459	15,055,338	51,063,024	30%	21,939	14%
	2020	104,075,391	29,199,581	19,361,371	62,293,751	28%	21,650	15%
	2021	102,791,440	34,657,358	23,436,497	75,196,665	34%	21,347	17%
	2022	101,441,955	40,839,315	28,105,749	89,943,397	40%	21,027	18%
	2023	100,018,754	47,851,047	33,430,612	106,754,496	48%	20,690	20%
	2024	98,514,771	55,788,133	39,485,981	125,876,681	57%	20,335	22%
	2025	96,922,613	64,761,703	46,350,376	147,595,488	67%	19,959	24%
	2026	95,237,056	74,866,248	54,119,730	172,201,606	79%	19,562	27%
	2027	93,451,390	86,860,069	63,027,911	200,528,354	93%	19,141	29%
	2028	91,546,822	100,844,465	73,314,163	233,287,323	110%	18,691	32%
	2029	89,503,631	116,352,697	85,071,764	270,634,335	130%	18,212	35%
	2030	87,311,869	133,493,770	98,368,470	312,771,055	153%	17,700	39%
	2031	84,962,908	152,150,340	113,239,946	359,747,601	179%	17,156	42%
	2032	82,449,570	171,835,605	129,606,790	411,199,117	208%	16,579	46%
	2033	79,767,050	192,346,181	147,342,455	466,674,050	241%	15,968	51%
	2034	76,913,488	213,333,458	166,273,850	525,531,447	277%	15,324	55%
	2035	73,890,207	234,203,784	186,125,698	586,790,557	317%	14,648	60%
	2036	70,702,709	254,410,449	206,541,766	649,253,655	360%	13,943	65%
	2037	67,361,095	273,601,297	227,143,066	711,722,957	406%	13,212	69%
	2038	63,879,577	291,308,819	247,525,938	772,907,935	456%	12,460	75%
	2039	60,280,256	306,673,857	267,184,727	831,127,267	509%	11,691	80%
	2040	56,586,282	318,841,036	285,511,535	884,408,140	563%	10,910	85%
	2041	52,826,220	327,639,730	301,952,383	931,123,908	620%	10,125	90%
	2042	49,030,534	333,034,075	316,058,346	970,032,143	679%	9,341	94%
	2043	45,232,920	335,059,501	327,491,099	1,000,243,229	741%	8,566	99%
	2044	41,468,076	333,401,172	335,923,412	1,020,859,049	804%	7,806	104%
	2045	37,770,969	328,098,107	341,096,079	1,031,264,806	869%	7,068	108%
	2046	34,175,196	319,388,554	342,870,353	1,031,216,164	935%	6,358	112%
	2047	30,712,525	307,914,168	341,277,090	1,021,086,481	1,003%	5,681	115%
	2048	27,410,680	293,937,563	336,438,212	1,001,400,838	1,072%	5,042	119%
	2049	24,293,441	277,851,237	328,553,405	972,893,052	1,144%	4,444	122%
	2050	21,378,484	259,836,139	317,843,668	936,272,755	1,215%	3,891	124%
	2051	18,680,147	240,673,568	304,647,225	892,718,526	1,288%	3,383	127%
	2052-2056	60,782,672	911,238,618	1,268,886,318	3,664,793,157	1,499%	10,896	135%
	2057-2061	25,212,126	492,267,782	808,305,970	2,280,070,437	1,953%	4,513	139%
	2062-2066	9,026,453	227,017,262	435,157,137	1,201,798,286	2,515%	1,640	140%
	2067-2071	2,953,931	92,214,350	204,247,060	553,578,768	3,122%	542	141%
	2072-2076	913,463	33,215,420	85,348,096	227,081,350	3,636%	170	141%

[1] Actual earned premium increases from the history to projection because of differences in the treatment of waiver of premium. Historical data reduced earned premium for waiver, whereas projections treat waiver as an increase to claims with no impact on premium. The difference in the treatment of waiver has an immaterial impact on the lifetime loss ratio.

[2] Incurred Claims are discounted to the year of incurral, whereas Paid Claims and Claim Reserves are calendar year values that are not discounted to the date of incurral.

**Attachment 15D**  
**Massachusetts Mutual Life Insurance Company**  
**Actual and Projected Experience by Calendar Year**  
**Nationwide Experience Restated to Proposed Increase From Inception**  
**Lifetime-Pay Policy Forms Issued On or After October 1, 2003 with a Lifetime Benefit Period and Auto Inflation**

	Calendar Year	Actual or Projected Experience using Current Assumptions						Cumulative LR with Interest
		A Earned Premium <sup>[1]</sup>	B Incurred Claims <sup>[2]</sup>	C Paid Claims <sup>[2]</sup>	D Claim Reserves <sup>[2]</sup>	E = B / A Incurred Loss Ratio	F End of Year Lives	G Actual (Column E) with Max. Val. Interest
Historical Experience	2000	0	0	0	0	0%	0	0%
	2001	0	0	0	0	0%	0	0%
	2002	0	0	0	0	0%	0	0%
	2003	908,003	0	0	0	0%	1,719	0%
	2004	18,738,272	0	0	0	0%	7,678	0%
	2005	48,152,729	75,796	4,200	72,983	0%	14,081	0%
	2006	65,445,328	1,127,516	82,195	1,140,534	2%	16,829	1%
	2007	77,895,551	3,514,168	223,222	4,516,103	5%	19,117	2%
	2008	91,608,394	3,031,188	669,165	7,020,479	3%	21,274	3%
	2009	97,525,173	3,027,259	1,031,859	9,207,970	3%	21,901	3%
	2010	101,472,649	3,429,813	1,229,487	11,649,145	3%	22,379	3%
	2011	104,915,035	4,771,029	1,961,110	14,778,628	5%	22,973	3%
	2012	110,798,689	3,770,638	2,716,947	16,210,497	3%	23,744	3%
	2013	110,816,650	8,863,428	3,542,925	22,034,790	8%	23,482	4%
	2014	109,143,370	11,343,367	4,605,690	29,456,456	10%	23,223	4%
	2015	107,656,085	11,423,542	5,728,283	36,054,090	11%	22,987	5%
	2016	106,323,894	9,496,457	7,006,668	34,707,994	9%	22,755	5%
Projected Future Experience (60 Years)	2017	107,712,418	16,574,197	9,670,958	34,588,351	15%	22,487	6%
	2018	106,517,149	20,109,919	11,189,897	42,482,673	19%	22,217	7%
	2019	105,311,522	24,381,082	15,304,560	51,913,744	23%	21,939	8%
	2020	104,075,391	29,199,581	19,580,352	62,940,249	28%	21,650	8%
	2021	102,791,440	34,657,358	23,606,509	75,684,368	34%	21,347	10%
	2022	101,441,955	40,839,315	28,237,186	90,308,125	40%	21,027	11%
	2023	100,018,754	47,851,047	33,531,840	107,024,324	48%	20,690	12%
	2024	98,514,771	55,788,133	39,563,548	126,073,623	57%	20,335	14%
	2025	96,922,613	64,761,703	46,409,375	147,736,849	67%	19,959	15%
	2026	95,237,056	74,866,248	54,163,956	172,301,193	79%	19,562	17%
	2027	93,451,390	86,860,069	63,060,278	200,597,301	93%	19,141	19%
	2028	91,546,822	100,844,465	73,337,146	233,334,484	110%	18,691	21%
	2029	89,503,631	116,352,697	85,087,634	270,666,443	130%	18,212	23%
	2030	87,311,869	133,493,770	98,379,227	312,792,964	153%	17,700	26%
	2031	84,962,908	152,150,340	113,247,199	359,762,637	179%	17,156	29%
	2032	82,449,570	171,835,605	129,611,709	411,209,494	208%	16,579	32%
	2033	79,767,050	192,346,181	147,345,821	466,681,242	241%	15,968	35%
	2034	76,913,488	213,333,458	166,276,167	525,536,447	277%	15,324	38%
	2035	73,890,207	234,203,784	186,127,299	586,794,042	317%	14,648	41%
	2036	70,702,709	254,410,449	206,542,877	649,256,089	360%	13,943	45%
	2037	67,361,095	273,601,297	227,143,841	711,724,657	406%	13,212	49%
	2038	63,879,577	291,308,819	247,526,481	772,909,122	456%	12,460	52%
	2039	60,280,256	306,673,857	267,185,109	831,128,092	509%	11,691	56%
	2040	56,586,282	318,841,036	285,511,804	884,408,711	563%	10,910	60%
	2041	52,826,220	327,639,730	301,952,573	931,124,300	620%	10,125	64%
	2042	49,030,534	333,034,075	316,058,480	970,032,407	679%	9,341	67%
	2043	45,232,920	335,059,501	327,491,196	1,000,243,401	741%	8,566	71%
	2044	41,468,076	333,401,172	335,923,481	1,020,859,155	804%	7,806	74%
	2045	37,770,969	328,098,107	341,096,128	1,031,264,865	869%	7,068	77%
	2046	34,175,196	319,388,554	342,870,388	1,031,216,189	935%	6,358	80%
	2047	30,712,525	307,914,168	341,277,109	1,021,086,487	1,003%	5,681	83%
	2048	27,410,680	293,937,563	336,438,218	1,001,400,838	1,072%	5,042	85%
	2049	24,293,441	277,851,237	328,553,405	972,893,052	1,144%	4,444	87%
	2050	21,378,484	259,836,139	317,843,668	936,272,755	1,215%	3,891	89%
	2051	18,680,147	240,673,568	304,647,225	892,718,526	1,288%	3,383	91%
	2052-2056	60,782,672	911,238,618	1,268,886,318	3,664,793,157	1,499%	10,896	97%
	2057-2061	25,212,126	492,267,782	808,305,970	2,280,070,437	1,953%	4,513	100%
	2062-2066	9,026,453	227,017,262	435,157,137	1,201,798,286	2,515%	1,640	101%
	2067-2071	2,953,931	92,214,350	204,247,060	553,578,768	3,122%	542	101%
	2072-2076	913,463	33,215,420	85,348,096	227,081,350	3,636%	170	102%

[1] Actual earned premium increases from the history to projection because of differences in the treatment of waiver of premium. Historical data reduced earned premium for waiver, whereas projections treat waiver as an increase to claims with no impact on premium. The difference in the treatment of waiver has an immaterial impact on the lifetime loss ratio.

[2] Incurred Claims are discounted to the year of incurral, whereas Paid Claims and Claim Reserves are calendar year values that are not discounted to the date of incurral.

**Attachment 15E**  
**Massachusetts Mutual Life Insurance Company**  
**Projected Experience by Calendar Year**  
**Nationwide Expected Experience**  
**Lifetime-Pay Policy Forms Issued On or After October 1, 2003 with a Lifetime Benefit Period and Auto Inflation**

	Calendar Year	Projected Experience using Pricing Assumptions						Cumulative LR with Interest
		A Earned Premium	B Incurred Claims <sup>[1]</sup>	C Paid Claims <sup>[1]</sup>	D Claim Reserves <sup>[1]</sup>	E = B / A Incurred Loss Ratio	F End of Year Lives	G Actual (Column E) with Max. Val. Interest
Projected Experience	2000	0	0	0	0	0%	0	0%
	2001	0	0	0	0	0%	0	0%
	2002	0	0	0	0	0%	0	0%
	2003	456,958	4,990	620	4,450	1%	1,724	1%
	2004	9,457,943	106,414	15,154	97,775	1%	7,667	1%
	2005	23,838,814	380,190	85,084	404,875	2%	13,718	1%
	2006	31,438,830	867,148	264,955	1,047,345	3%	15,893	2%
	2007	36,557,982	1,627,778	612,580	2,163,577	4%	17,671	3%
	2008	42,485,615	2,650,064	1,183,869	3,838,704	6%	19,378	4%
	2009	44,847,601	3,924,596	2,011,529	6,124,886	9%	19,665	5%
	2010	46,601,340	5,226,490	3,078,377	8,860,751	11%	19,832	6%
	2011	48,131,701	6,328,659	4,281,539	11,737,463	13%	20,035	7%
	2012	51,038,298	7,382,709	5,507,611	14,681,609	14%	20,409	8%
	2013	50,376,195	8,429,384	6,719,478	17,676,739	17%	19,697	9%
	2014	48,693,836	9,449,318	7,905,694	20,693,050	19%	19,017	10%
	2015	47,144,231	10,544,394	9,066,462	23,801,801	22%	18,363	11%
	2016	45,658,779	11,759,662	10,243,283	27,089,310	26%	17,725	12%
	2017	44,207,859	13,131,971	11,493,357	30,646,192	30%	17,098	13%
	2018	42,773,883	14,647,410	12,861,806	34,520,370	34%	16,476	14%
	2019	41,337,584	16,316,040	14,383,313	38,753,867	39%	15,848	15%
	2020	39,876,577	18,117,587	16,068,629	43,359,057	45%	15,210	17%
	2021	38,399,844	19,981,053	17,884,693	48,282,221	52%	14,574	18%
	2022	36,917,927	21,944,960	19,809,395	53,524,314	59%	13,944	19%
	2023	35,436,043	24,040,048	21,860,403	59,111,278	68%	13,320	21%
	2024	33,953,283	26,240,954	24,040,581	65,040,209	77%	12,703	22%
	2025	32,472,554	28,538,042	26,341,934	71,302,110	88%	12,094	24%
	2026	30,994,488	30,918,989	28,754,333	77,880,037	100%	11,492	25%
	2027	29,519,168	33,369,470	31,275,218	84,751,031	113%	10,898	27%
	2028	28,047,511	35,849,695	33,878,887	91,861,810	128%	10,313	29%
	2029	26,581,925	38,281,412	36,535,748	99,108,937	144%	9,738	30%
	2030	25,125,433	40,658,597	39,205,841	106,415,763	162%	9,172	32%
	2031	23,680,753	42,949,572	41,847,758	113,698,797	181%	8,617	34%
	2032	22,250,718	45,101,300	44,428,102	120,855,141	203%	8,074	36%
	2033	20,839,302	47,077,796	46,904,538	127,780,952	226%	7,543	38%
	2034	19,450,754	48,795,479	49,228,970	134,330,594	251%	7,025	39%
	2035	18,089,286	50,315,797	51,355,679	140,457,904	278%	6,522	41%
	2036	16,758,777	51,557,431	53,251,107	146,054,313	308%	6,034	43%
	2037	15,463,368	52,459,917	54,874,736	150,986,279	339%	5,562	45%
	2038	14,208,136	52,967,054	56,170,488	155,108,967	373%	5,107	47%
	2039	12,997,107	53,098,503	57,090,139	158,339,705	409%	4,671	48%
	2040	11,834,421	52,913,968	57,630,832	160,667,546	447%	4,253	50%
	2041	10,723,923	52,317,322	57,791,905	161,992,377	488%	3,855	51%
	2042	9,670,106	51,259,955	57,530,498	162,203,368	530%	3,479	53%
	2043	8,676,668	49,840,647	56,816,448	161,314,231	574%	3,124	54%
	2044	7,744,966	48,044,369	55,659,501	159,315,903	620%	2,791	55%
	2045	6,876,854	45,944,371	54,089,685	156,263,425	668%	2,480	56%
	2046	6,073,801	43,565,038	52,134,376	152,213,050	717%	2,192	57%
	2047	5,336,355	40,985,669	49,830,629	147,270,050	768%	1,928	58%
	2048	4,664,328	38,264,427	47,236,633	141,557,543	820%	1,686	59%
	2049	4,055,601	35,420,238	44,416,371	135,173,029	873%	1,467	60%
	2050	3,507,838	32,543,423	41,433,951	128,260,609	928%	1,270	61%
	2051	3,018,830	29,637,321	38,350,037	120,920,397	982%	1,093	61%
	2052-2056	9,584,156	108,322,830	145,700,305	489,890,654	1,130%	3,474	63%
	2057-2061	4,047,392	57,784,604	81,478,375	315,434,047	1,428%	1,470	64%
	2062-2066	1,607,413	28,605,028	41,210,186	187,556,875	1,780%	586	65%
	2067-2071	622,112	13,429,223	19,534,007	105,264,165	2,159%	228	65%
	2072-2076	234,042	6,032,137	8,847,278	56,254,382	2,577%	85	65%

[1] Incurred Claims are discounted to the year of incurral, whereas Paid Claims and Claim Reserves are calendar year values that are not discounted to the date of incurral.

**Attachment 15F**  
**Massachusetts Mutual Life Insurance Company**  
**Actual and Projected Experience by Calendar Year**  
**Nationwide Experience - Before Requested Rate Increase**  
**Lifetime-Pay Policy Forms Issued On or After October 1, 2003 with a Lifetime Benefit Period and Auto Inflation**

	Calendar Year	Actual or Projected Experience using Original Pricing Assumptions						Cumulative LR with Interest
		A Earned Premium	B Incurred Claims <sup>[1]</sup>	C Paid Claims <sup>[1][2]</sup>	D Claim Reserves <sup>[1][2]</sup>	E = B / A Incurred Loss Ratio	F End of Year Lives	G Actual (Column E) with Max. Val. Interest
Historical Experience	2000	0	0	0	0	0%	0	0%
	2001	0	0	0	0	0%	0	0%
	2002	0	0	0	0	0%	0	0%
	2003	456,706	0	0	0	0%	1,719	0%
	2004	9,404,890	0	0	0	0%	7,678	0%
	2005	24,170,959	75,796	4,200	72,983	0%	14,081	0%
	2006	32,938,147	1,127,516	82,195	1,140,534	3%	16,829	2%
	2007	39,264,400	3,514,168	223,222	4,516,103	9%	19,117	4%
	2008	46,254,071	3,031,188	669,165	7,020,479	7%	21,274	5%
	2009	49,438,982	3,027,259	1,031,859	9,207,970	6%	21,901	5%
	2010	51,744,807	3,429,813	1,229,487	11,649,145	7%	22,379	6%
	2011	53,835,655	4,771,029	1,961,110	14,778,628	9%	22,973	6%
	2012	57,382,229	3,770,638	2,716,947	16,210,497	7%	23,744	6%
	2013	57,583,295	8,863,428	3,542,925	22,034,790	15%	23,482	7%
	2014	56,679,042	11,343,367	4,605,690	29,456,456	20%	23,223	8%
	2015	55,868,640	11,423,542	5,728,283	36,054,090	20%	22,987	10%
	2016	55,150,182	9,496,457	7,006,668	34,707,994	17%	22,755	10%
Projected Future Experience (60 Years)	2017	54,694,810	20,598,038	0	0	38%	21,882	12%
	2018	52,737,211	22,901,777	0	0	43%	21,017	14%
	2019	50,773,016	25,440,642	0	0	50%	20,140	16%
	2020	48,771,270	28,154,774	0	0	58%	19,247	17%
	2021	46,746,817	30,943,662	0	0	66%	18,359	19%
	2022	44,723,786	33,834,034	0	0	76%	17,483	21%
	2023	42,711,752	36,871,741	0	0	86%	16,618	23%
	2024	40,710,673	40,023,826	0	0	98%	15,767	25%
	2025	38,724,139	43,257,720	0	0	112%	14,929	27%
	2026	36,753,602	46,541,033	0	0	127%	14,105	30%
	2027	34,800,078	49,841,087	0	0	143%	13,298	32%
	2028	32,865,657	53,068,623	0	0	161%	12,506	34%
	2029	30,954,113	56,143,201	0	0	181%	11,732	36%
	2030	29,069,826	59,036,269	0	0	203%	10,976	39%
	2031	27,216,639	61,696,851	0	0	227%	10,240	41%
	2032	25,398,626	64,071,138	0	0	252%	9,526	43%
	2033	23,620,989	66,094,064	0	0	280%	8,833	45%
	2034	21,889,259	67,685,035	0	0	309%	8,165	47%
	2035	20,208,553	68,907,328	0	0	341%	7,521	50%
	2036	18,583,057	69,681,072	0	0	375%	6,903	52%
	2037	17,017,419	69,957,731	0	0	411%	6,312	54%
	2038	15,516,638	69,677,103	0	0	449%	5,749	56%
	2039	14,084,680	68,888,018	0	0	489%	5,215	58%
	2040	12,725,015	67,677,386	0	0	532%	4,710	59%
	2041	11,440,309	65,966,512	0	0	577%	4,234	61%
	2042	10,234,186	63,717,732	0	0	623%	3,789	62%
	2043	9,109,012	61,056,261	0	0	670%	3,375	64%
	2044	8,064,848	58,019,907	0	0	719%	2,990	65%
	2045	7,101,996	54,698,044	0	0	770%	2,636	66%
	2046	6,220,297	51,133,508	0	0	822%	2,312	67%
	2047	5,418,780	47,411,505	0	0	875%	2,016	68%
	2048	4,695,513	43,605,032	0	0	929%	1,750	69%
	2049	4,046,743	39,782,760	0	0	983%	1,510	70%
	2050	3,468,694	36,018,750	0	0	1,038%	1,296	71%
	2051	2,957,997	32,324,065	0	0	1,093%	1,108	71%
	2052-2056	9,159,847	113,241,927	0	0	1,236%	3,447	73%
	2057-2061	3,690,929	55,840,585	0	0	1,513%	1,405	74%
	2062-2066	1,397,127	25,427,110	0	0	1,820%	541	74%
	2067-2071	512,996	10,943,781	0	0	2,133%	203	74%
	2072-2076	183,743	4,581,664	0	0	2,494%	74	74%

[1] Incurred Claims are discounted to the year of incurral, whereas Paid Claims and Claim Reserves are calendar year values that are not discounted to the date of incurral.

[2] Projected values for paid claims and claim reserves are not readily available in the model used to project original pricing assumptions based on actual historical experience.

**Attachment 16**  
**Massachusetts Mutual Life Insurance Company**  
**Status of Filings as of August 30, 2018**  
**All Jurisdictions in Which These Forms Are in Force**  
**All Rate Series Combined**

Jurisdiction	Rate Series	12/31/2016 Insureds In Force <sup>[1]</sup>	12/31/2016 Annualized Premium <sup>[1]</sup>	Percent of Total Premium	Current Requested Increases				
					Average Requested Increase <sup>[2]</sup>	Status	Date Submitted	Disposition Date	Average Increase to be Implemented <sup>[2]</sup>
Alaska	400 Series	2	\$2,877	0.0%	100%	Not Applicable <sup>[3]</sup>	Not Applicable <sup>[3]</sup>	Not Applicable <sup>[3]</sup>	100%
	500 Series	2	\$3,557	0.0%	100%	Not Applicable <sup>[3]</sup>	Not Applicable <sup>[3]</sup>	Not Applicable <sup>[3]</sup>	100%
	511 Series	4	\$10,739	0.0%	34%	Not Applicable <sup>[3]</sup>	Not Applicable <sup>[3]</sup>	Not Applicable <sup>[3]</sup>	34%
Alabama	200 Series	27	\$49,931	0.0%	86%	Pending	6/20/2018		
	300 Series	92	\$147,227	0.1%	97%	Pending	6/20/2018		
	400 Series	84	\$184,731	0.1%	89%	Pending	6/20/2018		
	500 Series	138	\$422,391	0.3%	72%	Pending	6/20/2018		
	511 Series	42	\$106,245	0.1%	32%	Pending	6/20/2018		
Arkansas	200 Series	37	\$31,970	0.0%	79%	Pending	7/30/2018		
	300 Series	29	\$57,738	0.0%	99%	Pending	7/30/2018		
	400 Series	21	\$26,680	0.0%	86%	Pending	7/30/2018		
	500 Series	39	\$80,755	0.0%	56%	Pending	7/30/2018		
	511 Series	3	\$6,686	0.0%	27%	Pending	7/30/2018		
Arizona	200 Series	160	\$227,420	0.1%		Not Yet Filed			
	300 Series	198	\$324,539	0.2%		Not Yet Filed			
	400 Series	163	\$362,192	0.2%		Not Yet Filed			
	500 Series	183	\$576,073	0.4%		Not Yet Filed			
	511 Series	55	\$166,173	0.1%		Not Yet Filed			
California	200 Series	2,303	\$4,769,114	2.9%		Not Yet Filed			
	400 Series	1,028	\$3,115,704	1.9%		Not Yet Filed			
	500 Series	1,340	\$4,583,083	2.8%		Not Yet Filed			
	511 Series	1,454	\$4,181,205	2.5%		Not Yet Filed			
Colorado	200 Series	189	\$287,688	0.2%		Not Yet Filed			
	300 Series	332	\$552,162	0.3%		Not Yet Filed			
	400 Series	229	\$500,467	0.3%		Not Yet Filed			
	500 Series	214	\$647,101	0.4%		Not Yet Filed			
	511 Series	568	\$1,443,042	0.9%		Not Yet Filed			
Connecticut	200 Series	138	\$304,143	0.2%	85%	Filed	5/24/2018	8/22/2018	44%
	300 Series	258	\$645,937	0.4%	95%	Filed	5/24/2018	8/22/2018	44%
	400 Series	219	\$618,406	0.4%	87%	Filed	5/24/2018	8/22/2018	44%
	500 Series	322	\$1,311,359	0.8%	73%	Filed	5/24/2018	8/22/2018	44%
	511 Series	81	\$324,241	0.2%	34%	Filed	5/24/2018	8/22/2018	38%
District of Columbia	200 Series	64	\$122,341	0.1%	179%	Filed	7/12/2018	8/24/2018	10%
	300 Series	125	\$273,078	0.2%	201%	Filed	7/12/2018	8/24/2018	10%
	400 Series	77	\$250,160	0.2%	167%	Filed	7/12/2018	8/24/2018	10%
	500 Series	75	\$340,945	0.2%	99%	Filed	7/12/2018	8/24/2018	10%
	511 Series	15	\$92,757	0.1%	46%	Filed	7/12/2018	8/24/2018	10%
Delaware	200 Series	23	\$32,732	0.0%	103%	Pending	7/31/2018		
	300 Series	7	\$13,647	0.0%	92%	Pending	7/31/2018		
	400 Series	18	\$41,523	0.0%	95%	Pending	7/31/2018		
	500 Series	44	\$129,929	0.1%	77%	Pending	7/31/2018		
	511 Series	4	\$17,712	0.0%	28%	Pending	7/31/2018		
Florida	200 Series	585	\$1,054,065	0.6%		Not Yet Filed			
	300 Series	527	\$1,065,210	0.6%		Not Yet Filed			
	400 Series	241	\$740,618	0.5%		Not Yet Filed			
	500 Series	767	\$2,433,169	1.5%		Not Yet Filed			
	511 Series	499	\$1,302,515	0.8%		Not Yet Filed			
Georgia	200 Series	684	\$1,072,726	0.7%	96%	Pending	5/23/2018		
	300 Series	688	\$1,200,968	0.7%	97%	Pending	5/23/2018		
	400 Series	523	\$1,195,443	0.7%	95%	Pending	5/23/2018		
	500 Series	573	\$1,578,013	1.0%	67%	Pending	5/23/2018		
	511 Series	172	\$418,651	0.3%	30%	Pending	5/23/2018		
Hawaii	200 Series	116	\$192,094	0.1%	97%	Pending	6/11/2018		
	300 Series	106	\$192,489	0.1%	98%	Pending	6/11/2018		
	400 Series	48	\$114,817	0.1%	90%	Pending	6/11/2018		
	500 Series	152	\$356,848	0.2%	67%	Pending	6/11/2018		
	511 Series	39	\$81,383	0.0%	30%	Pending	6/11/2018		
Iowa	200 Series	133	\$171,685	0.1%	96%	Pending	7/24/2018		
	300 Series	167	\$264,666	0.2%	97%	Pending	7/24/2018		
	400 Series	98	\$191,884	0.1%	93%	Pending	7/24/2018		
	500 Series	179	\$513,416	0.3%	73%	Pending	7/24/2018		
	511 Series	46	\$91,309	0.1%	32%	Pending	7/24/2018		
Idaho	200 Series	15	\$24,302	0.0%	88%	Pending	7/25/2018		
	300 Series	35	\$56,378	0.0%	94%	Pending	7/25/2018		
	400 Series	21	\$43,018	0.0%	86%	Pending	7/25/2018		
	500 Series	61	\$160,705	0.1%	64%	Pending	7/25/2018		
	511 Series	10	\$31,809	0.0%	28%	Pending	7/25/2018		

**Attachment 16**  
**Massachusetts Mutual Life Insurance Company**  
**Status of Filings as of August 30, 2018**  
**All Jurisdictions in Which These Forms Are in Force**  
**All Rate Series Combined**

Jurisdiction	Rate Series	12/31/2016 Insureds In Force <sup>[1]</sup>	12/31/2016 Annualized Premium <sup>[1]</sup>	Percent of Total Premium	Current Requested Increases				
					Average Requested Increase <sup>[2]</sup>	Status	Date Submitted	Disposition Date	Average Increase to be Implemented <sup>[2]</sup>
Illinois	200 Series	410	\$615,483	0.4%	92%	Pending	5/15/2018		
	300 Series	502	\$900,178	0.5%	94%	Pending	5/15/2018		
	400 Series	329	\$757,737	0.5%	87%	Pending	5/15/2018		
	500 Series	498	\$1,584,574	1.0%	69%	Pending	5/15/2018		
	511 Series	194	\$556,945	0.3%	30%	Pending	5/15/2018		
Indiana	200 Series	91	\$159,572	0.1%		Not Yet Filed			
	300 Series	90	\$159,718	0.1%		Not Yet Filed			
	400 Series	63	\$134,844	0.1%		Not Yet Filed			
	500 Series	243	\$703,350	0.4%		Not Yet Filed			
	511 Series	34	\$107,840	0.1%		Not Yet Filed			
Kansas	200 Series	93	\$139,934	0.1%	97%	Pending	8/27/2018		
	300 Series	110	\$174,710	0.1%	97%	Pending	8/27/2018		
	400 Series	75	\$153,227	0.1%	82%	Pending	8/27/2018		
	500 Series	194	\$563,735	0.3%	72%	Pending	8/27/2018		
	511 Series	54	\$157,493	0.1%	31%	Pending	8/27/2018		
Kentucky	200 Series	104	\$127,260	0.1%		Not Yet Filed			
	300 Series	73	\$125,068	0.1%		Not Yet Filed			
	400 Series	78	\$186,413	0.1%		Not Yet Filed			
	500 Series	199	\$450,742	0.3%		Not Yet Filed			
	511 Series	45	\$110,312	0.1%		Not Yet Filed			
Louisiana	200 Series	131	\$184,830	0.1%	95%	Pending	8/29/2018		
	300 Series	79	\$122,181	0.1%	98%	Pending	8/29/2018		
	400 Series	84	\$147,024	0.1%	95%	Pending	8/29/2018		
	500 Series	113	\$307,680	0.2%	71%	Pending	8/29/2018		
	511 Series	35	\$136,904	0.1%	32%	Pending	8/29/2018		
Massachusetts	200 Series	586	\$1,150,774	0.7%	90%	Pending	5/14/2018		
	300 Series	438	\$1,010,322	0.6%	92%	Pending	5/14/2018		
	400 Series	272	\$818,316	0.5%	88%	Pending	5/14/2018		
	500 Series	631	\$2,140,601	1.3%	65%	Pending	5/14/2018		
	511 Series	300	\$931,289	0.6%	32%	Pending	5/14/2018		
Maryland	200 Series	1,037	\$1,931,222	1.2%	132%	Pending	6/8/2018		
	300 Series	1,014	\$2,025,559	1.2%	135%	Pending	6/8/2018		
	400 Series	838	\$2,395,056	1.5%	124%	Pending	6/8/2018		
	500 Series	698	\$2,672,086	1.6%	92%	Pending	6/8/2018		
	511 Series	133	\$455,439	0.3%	32%	Pending	6/8/2018		
Maine	200 Series	71	\$109,415	0.1%		Not Yet Filed			
	300 Series	37	\$62,943	0.0%		Not Yet Filed			
	400 Series	21	\$58,734	0.0%		Not Yet Filed			
	500 Series	29	\$101,186	0.1%		Not Yet Filed			
	511 Series	13	\$43,606	0.0%		Not Yet Filed			
Michigan	200 Series	442	\$671,210	0.4%	90%	Filed	6/4/2018	8/27/2018	90%
	300 Series	568	\$1,011,349	0.6%	95%	Filed	6/4/2018	8/27/2018	95%
	400 Series	320	\$691,166	0.4%	80%	Filed	6/4/2018	8/27/2018	80%
	500 Series	419	\$1,092,866	0.7%	66%	Filed	6/4/2018	8/27/2018	66%
	511 Series	138	\$394,290	0.2%	31%	Filed	6/4/2018	8/27/2018	31%
Minnesota	200 Series	188	\$303,333	0.2%		Not Yet Filed			
	300 Series	99	\$169,537	0.1%		Not Yet Filed			
	400 Series	109	\$219,158	0.1%		Not Yet Filed			
	500 Series	341	\$921,921	0.6%		Not Yet Filed			
	511 Series	62	\$149,702	0.1%		Not Yet Filed			
Missouri	200 Series	196	\$259,757	0.2%	94%	Pending	6/29/2018		
	300 Series	217	\$314,918	0.2%	91%	Pending	6/29/2018		
	400 Series	197	\$361,551	0.2%	86%	Pending	6/29/2018		
	500 Series	488	\$1,284,274	0.8%	70%	Pending	6/29/2018		
Mississippi	200 Series	247	\$369,454	0.2%	110%	Pending	6/25/2018		
	300 Series	229	\$372,191	0.2%	113%	Pending	6/25/2018		
	400 Series	157	\$306,491	0.2%	104%	Pending	6/25/2018		
	500 Series	192	\$621,514	0.4%	78%	Pending	6/25/2018		
	511 Series	38	\$99,015	0.1%	28%	Pending	6/25/2018		
Montana	200 Series	19	\$27,831	0.0%		Not Yet Filed			
	300 Series	17	\$26,333	0.0%		Not Yet Filed			
	400 Series	12	\$27,970	0.0%		Not Yet Filed			
	500 Series	36	\$138,021	0.1%		Not Yet Filed			
North Carolina	200 Series	708	\$1,056,574	0.6%	107%	Pending	7/16/2018		
	300 Series	845	\$1,441,470	0.9%	111%	Pending	7/16/2018		
	400 Series	458	\$965,764	0.6%	101%	Pending	7/16/2018		
	500 Series	537	\$1,606,978	1.0%	72%	Pending	7/16/2018		
	511 Series	148	\$421,392	0.3%	32%	Pending	7/16/2018		
North Dakota	300 Series	9	\$13,931	0.0%	79%	Pending	7/26/2018		
	500 Series	5	\$8,003	0.0%	78%	Pending	7/26/2018		
	511 Series	5	\$12,401	0.0%	38%	Pending	7/26/2018		

**Attachment 16**  
**Massachusetts Mutual Life Insurance Company**  
**Status of Filings as of August 30, 2018**  
**All Jurisdictions in Which These Forms Are in Force**  
**All Rate Series Combined**

Jurisdiction	Rate Series	12/31/2016 Insureds In Force <sup>[1]</sup>	12/31/2016 Annualized Premium <sup>[1]</sup>	Percent of Total Premium	Current Requested Increases				
					Average Requested Increase <sup>[2]</sup>	Status	Date Submitted	Disposition Date	Average Increase to be Implemented <sup>[2]</sup>
Nebraska	200 Series	317	\$378,532	0.2%		Not Yet Filed			
	300 Series	332	\$454,936	0.3%		Not Yet Filed			
	400 Series	226	\$392,963	0.2%		Not Yet Filed			
	500 Series	421	\$1,098,498	0.7%		Not Yet Filed			
	511 Series	94	\$251,932	0.2%		Not Yet Filed			
New Hampshire	200 Series	77	\$122,680	0.1%		Not Yet Filed			
	300 Series	84	\$163,049	0.1%		Not Yet Filed			
	400 Series	44	\$107,624	0.1%		Not Yet Filed			
	500 Series	117	\$445,577	0.3%		Not Yet Filed			
	511 Series	48	\$144,634	0.1%		Not Yet Filed			
New Jersey	200 Series	545	\$1,103,444	0.7%	91%	Pending	6/21/2018		
	300 Series	795	\$1,751,668	1.1%	95%	Pending	6/21/2018		
	400 Series	473	\$1,273,055	0.8%	90%	Pending	6/21/2018		
	500 Series	603	\$2,228,057	1.4%	67%	Pending	6/21/2018		
	511 Series	307	\$930,216	0.6%	31%	Pending	6/21/2018		
New Mexico	200 Series	36	\$49,919	0.0%	100%	Filed	7/17/2018	8/22/2018	10%
	300 Series	40	\$83,750	0.1%	86%	Filed	7/17/2018	8/22/2018	10%
	400 Series	49	\$130,048	0.1%	90%	Filed	7/17/2018	8/22/2018	10%
	500 Series	111	\$281,319	0.2%	65%	Filed	7/17/2018	8/22/2018	10%
	511 Series	19	\$58,004	0.0%	24%	Filed	7/17/2018	8/22/2018	10%
Nevada	200 Series	95	\$143,646	0.1%	92%	Pending	7/17/2018		
	300 Series	87	\$170,924	0.1%	94%	Pending	7/17/2018		
	400 Series	48	\$126,983	0.1%	84%	Pending	7/17/2018		
	500 Series	33	\$102,221	0.1%	70%	Pending	7/17/2018		
	511 Series	7	\$30,593	0.0%	26%	Pending	7/17/2018		
New York	200 Series	724	\$1,749,274	1.1%	88%	Pending	7/12/2018		
	300 Series	1,120	\$3,083,497	1.9%	95%	Pending	7/12/2018		
	400 Series	773	\$2,663,214	1.6%	86%	Pending	7/12/2018		
	500 Series	1,803	\$7,876,803	4.8%	74%	Pending	7/12/2018		
	511 Series	360	\$1,467,897	0.9%	33%	Pending	7/12/2018		
Ohio	200 Series	351	\$521,546	0.3%		Not Yet Filed			
	300 Series	363	\$605,360	0.4%		Not Yet Filed			
	400 Series	327	\$716,320	0.4%		Not Yet Filed			
	500 Series	448	\$1,257,060	0.8%		Not Yet Filed			
	511 Series	159	\$456,057	0.3%		Not Yet Filed			
Oklahoma	200 Series	252	\$322,507	0.2%	94%	Filed	6/28/2018	8/22/2018	10%
	300 Series	286	\$397,970	0.2%	92%	Filed	6/28/2018	8/22/2018	10%
	400 Series	282	\$530,617	0.3%	90%	Filed	6/28/2018	8/22/2018	10%
	500 Series	230	\$644,138	0.4%	66%	Filed	6/28/2018	8/22/2018	10%
	511 Series	66	\$125,980	0.1%	29%	Filed	6/28/2018	8/22/2018	10%
Oregon	200 Series	80	\$132,787	0.1%		Not Yet Filed			
	300 Series	174	\$321,052	0.2%		Not Yet Filed			
	400 Series	133	\$311,610	0.2%		Not Yet Filed			
	500 Series	83	\$233,549	0.1%		Not Yet Filed			
	511 Series	20	\$37,589	0.0%		Not Yet Filed			
Pennsylvania	200 Series	3,109	\$4,750,756	2.9%	91%	Pending	7/30/2018		
	400 Series	846	\$1,992,131	1.2%	80%	Pending	7/30/2018		
	500 Series	1,168	\$3,113,477	1.9%	65%	Pending	7/30/2018		
	511 Series	261	\$743,913	0.5%	31%	Pending	7/30/2018		
Puerto Rico	200 Series	22	\$31,213	0.0%	100%	Pending	8/1/2018		
	300 Series	49	\$61,227	0.0%	96%	Pending	8/1/2018		
	400 Series	176	\$301,252	0.2%	88%	Pending	8/1/2018		
	500 Series	143	\$334,824	0.2%	46%	Pending	8/1/2018		
	511 Series	54	\$108,325	0.1%	24%	Pending	8/1/2018		
Rhode Island	200 Series	53	\$86,270	0.1%	93%	Pending	7/23/2018		
	300 Series	54	\$118,390	0.1%	76%	Pending	7/23/2018		
	400 Series	52	\$132,717	0.1%	78%	Pending	7/23/2018		
	500 Series	71	\$176,038	0.1%	50%	Pending	7/23/2018		
	511 Series	15	\$44,852	0.0%	30%	Pending	7/23/2018		
South Carolina	200 Series	343	\$448,743	0.3%	93%	Pending	5/31/2018		
	300 Series	602	\$937,798	0.6%	96%	Pending	5/31/2018		
	400 Series	381	\$759,337	0.5%	90%	Pending	5/31/2018		
	500 Series	340	\$929,497	0.6%	65%	Pending	5/31/2018		
	511 Series	114	\$264,237	0.2%	26%	Pending	5/31/2018		
South Dakota	200 Series	3	\$2,960	0.0%	90%	Filed	7/2/2018	8/22/2018	90%
	300 Series	4	\$7,493	0.0%	68%	Filed	7/2/2018	8/22/2018	68%
	400 Series	4	\$8,319	0.0%	100%	Filed	7/2/2018	8/22/2018	100%
	500 Series	34	\$58,834	0.0%	68%	Filed	7/2/2018	8/22/2018	68%
	511 Series	3	\$7,151	0.0%	31%	Filed	7/2/2018	8/22/2018	31%



**Attachment 16**  
**Massachusetts Mutual Life Insurance Company**  
**Status of Filings as of August 30, 2018**  
**All Jurisdictions in Which These Forms Are in Force**  
**All Rate Series Combined**

Jurisdiction	Rate Series	12/31/2016 Insureds In Force <sup>[1]</sup>	12/31/2016 Annualized Premium <sup>[1]</sup>	Percent of Total Premium	Current Requested Increases				
					Average Requested Increase <sup>[2]</sup>	Status	Date Submitted	Disposition Date	Average Increase to be Implemented <sup>[2]</sup>
Tennessee	200 Series	484	\$708,247	0.4%	91%	Pending	5/31/2018		
	300 Series	655	\$1,045,655	0.6%	95%	Pending	5/31/2018		
	400 Series	311	\$655,331	0.4%	87%	Pending	5/31/2018		
	500 Series	424	\$1,234,243	0.8%	65%	Pending	5/31/2018		
	511 Series	123	\$369,677	0.2%	30%	Pending	5/31/2018		
Texas	200 Series	1,210	\$1,833,190	1.1%		Not Yet Filed			
	300 Series	860	\$1,499,267	0.9%		Not Yet Filed			
	400 Series	1,019	\$2,426,556	1.5%		Not Yet Filed			
	500 Series	1,495	\$4,552,184	2.8%		Not Yet Filed			
	511 Series	356	\$1,099,580	0.7%		Not Yet Filed			
Utah	200 Series	98	\$101,127	0.1%		Not Yet Filed			
	300 Series	84	\$125,650	0.1%		Not Yet Filed			
	400 Series	63	\$111,871	0.1%		Not Yet Filed			
	500 Series	127	\$295,454	0.2%		Not Yet Filed			
	511 Series	22	\$37,317	0.0%		Not Yet Filed			
Virginia	200 Series	1,227	\$1,931,695	1.2%	95%	Pending	8/29/2018		
	300 Series	1,198	\$2,206,018	1.3%	97%	Pending	8/29/2018		
	400 Series	989	\$2,327,049	1.4%	92%	Pending	8/29/2018		
	500 Series	1,015	\$3,149,105	1.9%	72%	Pending	8/29/2018		
	511 Series	307	\$947,132	0.6%	33%	Pending	8/29/2018		
Vermont	200 Series	20	\$40,579	0.0%		Not Yet Filed			
	300 Series	12	\$43,598	0.0%		Not Yet Filed			
	400 Series	15	\$38,996	0.0%		Not Yet Filed			
	500 Series	28	\$83,605	0.1%		Not Yet Filed			
	511 Series	4	\$13,290	0.0%		Not Yet Filed			
Washington	200 Series	193	\$306,086	0.2%	92%	Pending	7/11/2018		
	300 Series	279	\$465,991	0.3%	95%	Pending	7/11/2018		
	400 Series	153	\$306,745	0.2%	93%	Pending	7/11/2018		
	500 Series	550	\$1,576,534	1.0%	71%	Pending	7/11/2018		
Wisconsin	200 Series	65	\$122,815	0.1%	87%	Filed	6/28/2018	8/29/2018	87%
	300 Series	198	\$335,061	0.2%	96%	Filed	6/28/2018	8/29/2018	96%
	400 Series	99	\$194,164	0.1%	88%	Filed	6/28/2018	8/29/2018	88%
	500 Series	178	\$530,715	0.3%	77%	Filed	6/28/2018	8/29/2018	77%
	511 Series	61	\$143,071	0.1%	29%	Filed	6/28/2018	8/29/2018	29%
West Virginia	200 Series	40	\$53,315	0.0%	84%	Pending	8/13/2018		
	300 Series	53	\$86,755	0.1%	92%	Pending	8/13/2018		
	400 Series	43	\$94,671	0.1%	83%	Pending	8/13/2018		
	500 Series	49	\$121,295	0.1%	43%	Pending	8/13/2018		
	511 Series	12	\$30,301	0.0%	28%	Pending	8/13/2018		
Wyoming	200 Series	36	\$54,662	0.0%	94%	Pending	8/22/2018		
	300 Series	14	\$31,094	0.0%	97%	Pending	8/22/2018		
	400 Series	3	\$5,845	0.0%	72%	Pending	8/22/2018		
	500 Series	25	\$70,685	0.0%	75%	Pending	8/22/2018		
	511 Series	2	\$4,283	0.0%	35%	Pending	8/22/2018		

[1] Excludes policies assumed to be paid up prior to implementation of the requested rate increase.

[2] Average rate increase percentages are based on the distribution of business in force as of December 31, 2016 and the nationwide rate increase request, except where required to differ due to state-specific requirements.

[3] Alaska does not require Long-Term Care rates to be filed before use.

# Recouping Past LTC Losses

By David Plumb and Robert Eaton

There has been a fair amount of industry discussion over the years about recouping past losses on long-term care (LTC) policies. Both insurance carriers and regulators are generally in agreement that LTC insurers should not be able to recoup past losses through premium rate increases. Prior to the 2014 NAIC LTC Model Regulation (the Model Regulation), this prohibition had not been uniformly regulated, and in fact past losses on LTC had not even been defined.

During the latter part of 2013, an NAIC actuarial task force worked with the industry on revisions to the NAIC LTC Model Regulation regarding premium rate increases. One topic that the task force addressed was ensuring that past losses are not recouped through rate increases.

One idea that was floated in those discussions was that past losses should be defined as past premium inadequacies given current, updated information. That view says that companies should have charged higher premium rates from the beginning, as if they knew then what they know now. The company's failure to charge the higher premium rate from policy inception, in that view, is deemed to be a "past loss" that cannot be recouped. The way of determining a "past loss" is perhaps intended to reflect an opportunity cost of not charging higher past premiums. In reality, though, there is no opportunity for a company to have this perfect knowledge from policy inception.

Under this view, a company could show in a rate increase filing that past losses were not being recouped by assuming the proposed increased rates had been in effect from the policy's issuance. The company could then demonstrate compliance with the loss ratio test<sup>1</sup> under this alternate scenario.

After discussion, the NAIC task force agreed that it is not realistic to define past losses in this way. This line of reasoning greatly expands the risk in the product, injecting additional pricing risk by not allowing companies to seek the appropriate premium levels needed to maintain the future financial health of the policies. This risk is particularly germane as the bulk of LTC claims on today's inforce blocks will emerge in the coming decades.

The following examples illustrate this risk:

1. We assume that actual experience is exactly in-line with original pricing expectations for the first 20 policy years. After 20 years, a new type of care emerges which is more expensive and more desirable than the prior care options. LTC carriers now expect that future claims will be more than originally anticipated in pricing. Those higher future costs need to be funded by rate increases.

However, if the industry has to assume those higher rates had been charged in the first 20 years to satisfy the loss ratio test, the industry could suffer extreme losses.

Figure 1  
Original Pricing Expectation



Figure 2  
... with actual experience through duration 20

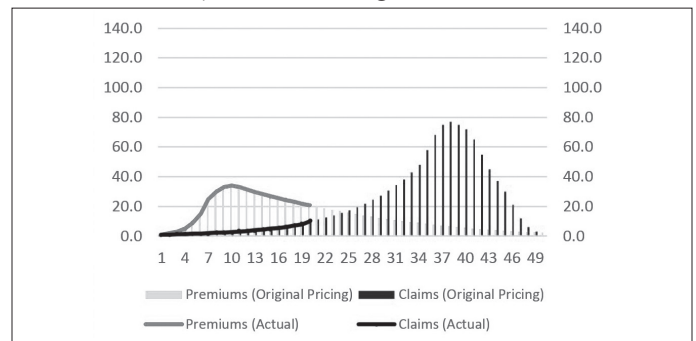


Figure 3  
Original Pricing, Actual, and Projected Experience as of duration 20

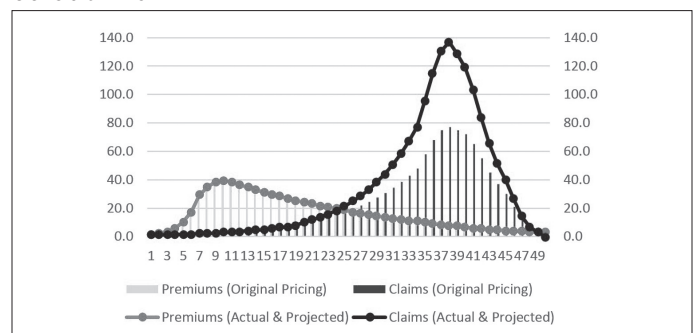


Figure 4

C. All premium rate schedule increases shall be determined in accordance with the following requirements:

(1) Exceptional increases shall provide that seventy percent (70%) of the present value of projected additional premiums from the exceptional increase will be returned to policyholders in benefits;

(2) Premium rate schedule increases shall be calculated such that the sum of the *lesser of* (i) the accumulated value of *actual* incurred *claims*, without the inclusion of active life reserves, or (ii) the accumulated value of historic *expected claims*, without the inclusion of active life reserves, plus the present value of the future expected incurred claims, projected without the inclusion of active life reserves, will not be less than the sum of the following:

(a) The accumulated value of the initial earned premium times the greater of (i) fifty-eight percent (58%) and (ii) the lifetime loss ratio consistent with the original filing including margins for moderately adverse experience;

(b) Eighty-five percent (85%) of the accumulated value of prior premium rate schedule increases on an earned basis;

(c) The present value of future projected initial earned premiums times the greater of (i) fifty-eight percent (58%) and (ii) the lifetime loss ratio consistent with the original filing including margins for moderately adverse experience; and

(d) Eighty-five percent (85%) of the present value of future projected premiums not in Subparagraph (c) of this paragraph on an earned basis;

(3) *Expected claims shall be calculated based on the original filing assumptions assumed until new assumptions are filed as part of a rate increase. New assumptions shall be used for all periods beyond each requested effective date of a rate increase. Expected claims are calculated for each calendar year based on the in-force at the beginning of the calendar year. Expected claims shall include margins for moderately adverse experience; either amounts included in the claims that were used to determine the lifetime loss ratio consistent with the original filing or as modified in any rate increase filing;*

Figures 1, 2, and 3 reflect this block of policies initially filed with a 70 percent loss ratio calculated at the maximum statutory discount rate. Following the emergence of the new type of care, the actuary projects a lifetime loss ratio of 100 percent. The actuary determines the maximum allowable rate increase according to the “58/85” test found in the Model Regulation, and using the higher, originally filed 70 percent loss ratio as the basis.

Had the actuary been required to pass the test by applying a proposed rate increase to all historical periods as well, the loss ratio on the premium increase would be 365 percent. While the present value of claims would increase by 113, the present value of premiums would only increase by 31, meaning the company could only fund about 25 percent of the increased claims through premium increases.

2. A young block of business with lower issue ages has experienced modestly favorable claims for 10 years compared with the actuary’s original pricing. The original pricing assumptions were based on industry data at the time the policy was first issued. Since that time, industry data have shown that ultimate voluntary lapse rates are likely to emerge much lower than originally anticipated. As a result, the actuary recommends an increase to premium rates for this young block of business.

The block of business has been closed for three years, and roughly half of the expected lifetime premium is in the past. If the actuary is required to pass the loss ratio test by re-stating all past premiums up to the proposed rate level, the allowable increase will be far lower and the company will suffer substantial future losses. This is true, in spite of the fact that there were no past claim losses on this block (in fact there were modest past gains).

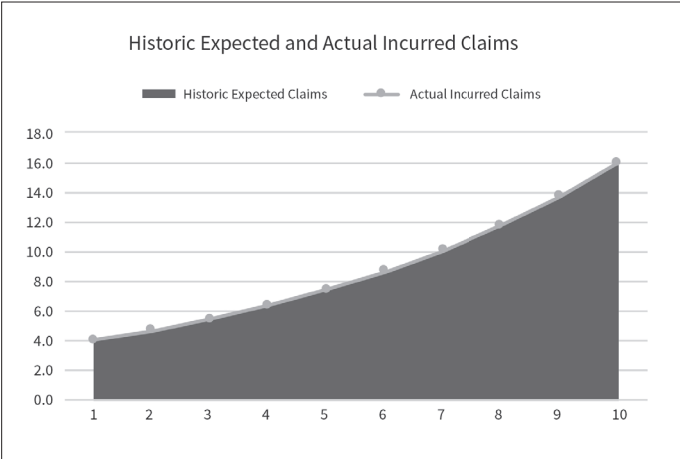
Following much discussion, the NAIC task force decided that past losses should be defined as any excess of actual past claims over expected past claims. If a company has had years of claims losses and hasn’t done anything about it, then those losses cannot be recouped. But if their losses are projected to be in the future as in the examples above, then there are no past losses. The portions (in bold italics) from Section 20.1 of the Model Regulation in Figure 4 illustrate how this concept ensures that past losses are not recouped through premium rate increases.

A numerical example, illustrated in Case 1, Case 2, and Case 3 demonstrates the application of this latest update to the Model Regulation. In each case an LTC actuary is considering re-pricing a block of policies that has not been re-priced in the past. To calculate the allowable premium rate increase according to Section 20.1, she examines the actual incurred claims and the historic expected claims based on the definitions above.

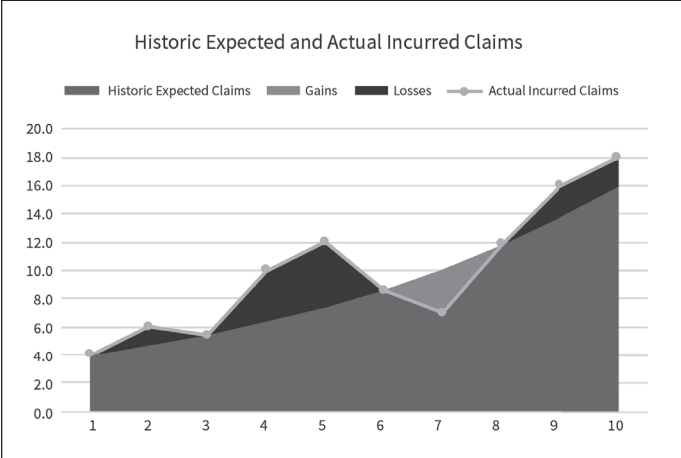


In each case the actuary must accumulate actual incurred claims and historical expected claims. Historical expected claims for a given year are based on original filing assumptions\* applied to the policies inforce at the beginning of that year, including an expected margin for moderately adverse experience. Because the original filing\* morbidity assumptions are applied to actual inforce policies, the expected claim calculation automatically adjusts for the actual persistency vs. the original filing\* persistency assumption. Table 1 summarizes the three cases, and the past claims which may be used to determine the maximum premium rate increase.

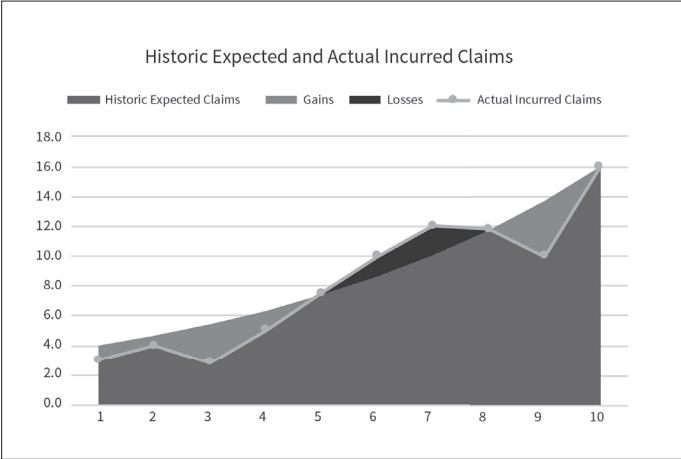
**Case 1**  
Actual incurred claims are equal to historic expected claims.



**Case 2**  
Actual incurred claims are greater than historic expected claims.



**Case 3**  
Actual incurred claims are less than historic expected claims.



**Table 1**  
Accumulated value at the end of year 10

Case	(a) Historic Expected Claims	(b) Actual Incurred Claims	Past losses	Lesser of (a) and (b)
1	100.7	100.7	0.0	100.7
2	100.7	113.5	12.8	100.7
3	100.7	93.3	0.0	93.3

In Case 2, there are past losses. The actuary is required to reflect the historic expected claims in determining the maximum allowable rate increase. This will produce a lower maximum rate increase than if actual incurred claims were used. In Case 3, where there are past claim gains, the actuary must reflect the favorable experience.

\*In the calculation, the actuary must use prospective adjustments based on the assumptions established at the time of any prior rate filings.

### POSSIBLE DRIVERS OF FUTURE LOSSES

Some companies today are finding themselves in the position that claims are higher than expected at the older attained ages and later policy durations. There are many reasons why this might be the case, including:

- The company's underwriting may have been better than originally expected. The company will not start to recognize its ultimate claim levels until this underwriting has worn off, and more policyholders reach the older attained ages. While a company may have years of favorable claims due to this good underwriting, they may be only starting to see what claims will be like at the older ages and later durations as the business matures.
- Companies may observe higher persistency, both in the form of lower mortality and lower voluntary lapse. This may result in more future claims and premiums. Since LTC claims are typically incurred in later durations while LTC premiums

are earned mostly in early durations, this could cause a future loss scenario.

- New technology and innovation will likely produce LTC methods, institutions, and devices which insurers could not have anticipated at the time of original pricing. If policyholders prefer these innovations, and they are more costly than traditional LTC care, then current premium rates may be inadequate to fund future claims.

Each of these scenarios indeed reflects future losses, not past losses, and the 2014 NAIC Model Regulation appropriately treats them as such. ■



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### ENDNOTES

- 1 Long-Term Care Insurance Model Regulation, Section 20 C and Section 20.1 C, <http://www.naic.org/store/free/MDL-641.pdf>, accessed Jan. 18, 2017

**Massachusetts Mutual Life Insurance Company**

**200 Series**

**Current Premium Rates**

Issue Age	Annual Base Rates		Premium Factors											HCBS Prem Wvr
	per \$10 of Daily Benefit Amount		Lifetime Pay Inflation Protection			Limited Pay		Limited Pay Inflation Protection			Nonforfeiture			
	Facility Only	Comprehensive	None	5% Simple	5% Compound	10 Year	20 Year	None	5% Simple	5% Compound	Full	Shortened BP		
18	\$32.00	\$40.00	1.000	2.500	3.650	2.500	1.620	1.000	3.000	4.250	1.472	1.243	1.050	
19	\$32.00	\$40.00	1.000	2.500	3.650	2.500	1.620	1.000	3.000	4.250	1.472	1.243	1.050	
20	\$32.00	\$40.00	1.000	2.500	3.650	2.500	1.620	1.000	3.000	4.250	1.472	1.243	1.050	
21	\$32.00	\$40.00	1.000	2.500	3.650	2.500	1.620	1.000	3.000	4.250	1.472	1.243	1.050	
22	\$32.00	\$40.00	1.000	2.500	3.650	2.500	1.620	1.000	3.000	4.250	1.472	1.243	1.050	
23	\$32.00	\$40.00	1.000	2.500	3.650	2.500	1.620	1.000	3.000	4.250	1.472	1.243	1.050	
24	\$32.00	\$40.00	1.000	2.500	3.650	2.500	1.620	1.000	3.000	4.250	1.472	1.243	1.050	
25	\$32.00	\$40.00	1.000	2.500	3.650	2.500	1.620	1.000	3.000	4.250	1.472	1.243	1.050	
26	\$32.00	\$40.00	1.000	2.500	3.650	2.500	1.620	1.000	3.000	4.250	1.472	1.243	1.050	
27	\$32.00	\$40.00	1.000	2.500	3.650	2.500	1.620	1.000	3.000	4.250	1.472	1.243	1.050	
28	\$32.00	\$40.00	1.000	2.500	3.650	2.500	1.620	1.000	3.000	4.250	1.472	1.243	1.050	
29	\$32.00	\$40.00	1.000	2.500	3.650	2.500	1.620	1.000	3.000	4.250	1.472	1.243	1.050	
30	\$32.00	\$40.00	1.000	2.500	3.650	2.500	1.620	1.000	3.000	4.250	1.472	1.243	1.050	
31	\$32.00	\$40.00	1.000	2.500	3.650	2.500	1.620	1.000	3.000	4.250	1.472	1.243	1.050	
32	\$32.00	\$40.00	1.000	2.500	3.650	2.500	1.620	1.000	3.000	4.250	1.472	1.243	1.050	
33	\$32.00	\$40.00	1.000	2.500	3.650	2.500	1.620	1.000	3.000	4.250	1.472	1.243	1.050	
34	\$32.00	\$40.00	1.000	2.500	3.650	2.500	1.620	1.000	3.000	4.250	1.472	1.243	1.050	
35	\$32.00	\$40.00	1.000	2.500	3.650	2.500	1.620	1.000	3.000	4.250	1.472	1.243	1.050	
36	\$32.00	\$40.00	1.000	2.500	3.650	2.500	1.620	1.000	3.000	4.250	1.472	1.243	1.050	
37	\$32.00	\$40.00	1.000	2.500	3.650	2.500	1.620	1.000	3.000	4.250	1.472	1.243	1.050	
38	\$32.00	\$40.00	1.000	2.500	3.650	2.500	1.620	1.000	3.000	4.250	1.472	1.243	1.050	
39	\$32.00	\$40.00	1.000	2.500	3.650	2.500	1.620	1.000	3.000	4.250	1.472	1.243	1.050	
40	\$32.00	\$40.00	1.000	2.500	3.650	2.500	1.620	1.000	3.000	4.250	1.472	1.243	1.050	
41	\$32.80	\$41.00	1.000	2.420	3.580	2.480	1.610	1.000	2.910	4.150	1.486	1.249	1.052	
42	\$33.60	\$42.00	1.000	2.340	3.510	2.460	1.600	1.000	2.820	4.050	1.500	1.254	1.054	
43	\$34.40	\$43.00	1.000	2.260	3.440	2.440	1.590	1.000	2.730	3.950	1.515	1.260	1.056	
44	\$35.20	\$44.00	1.000	2.180	3.370	2.420	1.580	1.000	2.640	3.850	1.529	1.265	1.058	
45	\$36.00	\$45.00	1.000	2.100	3.300	2.400	1.570	1.000	2.550	3.750	1.543	1.271	1.060	
46	\$36.80	\$46.00	1.000	2.040	3.230	2.380	1.560	1.000	2.460	3.670	1.558	1.276	1.062	
47	\$37.60	\$47.00	1.000	1.980	3.160	2.360	1.550	1.000	2.370	3.590	1.572	1.282	1.064	
48	\$38.40	\$48.00	1.000	1.940	3.100	2.340	1.540	1.000	2.280	3.510	1.586	1.287	1.066	
49	\$40.00	\$50.00	1.000	1.900	3.040	2.320	1.530	1.000	2.190	3.430	1.601	1.293	1.068	
50	\$41.60	\$52.00	1.000	1.860	3.000	2.300	1.520	1.000	2.100	3.400	1.615	1.298	1.070	
51	\$43.20	\$54.00	1.000	1.820	2.940	2.280	1.510	1.000	2.080	3.330	1.629	1.304	1.072	
52	\$44.80	\$56.00	1.000	1.780	2.880	2.260	1.500	1.000	2.060	3.260	1.643	1.309	1.074	
53	\$47.20	\$59.00	1.000	1.750	2.820	2.240	1.490	1.000	2.040	3.190	1.658	1.315	1.076	
54	\$49.60	\$62.00	1.000	1.720	2.760	2.220	1.480	1.000	2.020	3.120	1.672	1.320	1.078	
55	\$52.00	\$65.00	1.000	1.690	2.700	2.200	1.470	1.000	2.000	3.050	1.686	1.326	1.080	
56	\$54.40	\$68.00	1.000	1.660	2.630	2.180	1.460	1.000	1.980	2.970	1.701	1.331	1.082	
57	\$56.80	\$71.00	1.000	1.640	2.560	2.160	1.450	1.000	1.960	2.890	1.715	1.337	1.084	
58	\$59.20	\$74.00	1.000	1.620	2.490	2.140	1.440	1.000	1.940	2.810	1.729	1.342	1.086	
59	\$62.40	\$78.00	1.000	1.600	2.420	2.120	1.430	1.000	1.920	2.730	1.744	1.348	1.088	
60	\$65.60	\$82.00	1.000	1.580	2.350	2.100	1.420	1.000	1.900	2.650	1.758	1.353	1.090	
61	\$76.00	\$95.00	1.000	1.560	2.280	2.080	1.410	1.000	1.880	2.570	1.772	1.359	1.092	
62	\$86.40	\$108.00	1.000	1.550	2.210	2.060	1.400	1.000	1.860	2.490	1.786	1.364	1.094	
63	\$92.80	\$116.00	1.000	1.540	2.140	2.040	1.390	1.000	1.840	2.410	1.801	1.370	1.096	
64	\$99.20	\$124.00	1.000	1.530	2.070	2.020	1.380	1.000	1.820	2.330	1.815	1.375	1.098	
65	\$105.60	\$132.00	1.000	1.520	2.000	2.000	1.370	1.000	1.800	2.250	1.844	1.386	1.100	
66	\$125.60	\$157.00	1.000	1.510	1.940	1.950	1.360	1.000	1.770	2.200	1.872	1.397	1.102	
67	\$145.60	\$182.00	1.000	1.500	1.890	1.900	1.350	1.000	1.740	2.150	1.901	1.408	1.104	
68	\$158.40	\$198.00	1.000	1.480	1.840	1.850	1.340	1.000	1.710	2.100	1.929	1.419	1.106	
69	\$171.20	\$214.00	1.000	1.460	1.790	1.800	1.330	1.000	1.680	2.050	1.958	1.430	1.108	
70	\$184.00	\$230.00	1.000	1.450	1.730	1.750	1.320	1.000	1.650	2.000	1.987	1.441	1.110	
71	\$211.20	\$264.00	1.000	1.440	1.690	1.700	1.310	1.000	1.630	1.950	2.015	1.452	1.112	
72	\$238.40	\$298.00	1.000	1.430	1.660	1.650	1.300	1.000	1.610	1.900	2.044	1.463	1.114	
73	\$265.60	\$332.00	1.000	1.420	1.640	1.600	1.290	1.000	1.590	1.850	2.072	1.474	1.116	
74	\$292.80	\$366.00	1.000	1.410	1.620	1.550	1.280	1.000	1.570	1.830	2.101	1.485	1.118	
75	\$320.00	\$400.00	1.000	1.400	1.600	1.500	1.270	1.000	1.550	1.800	2.115	1.491	1.120	
76	\$371.20	\$464.00	1.000	1.390	1.580	1.480	1.260	1.000	1.530	1.770	2.130	1.496	1.122	
77	\$422.40	\$528.00	1.000	1.380	1.560	1.460	1.250	1.000	1.510	1.740	2.144	1.502	1.124	
78	\$473.60	\$592.00	1.000	1.370	1.540	1.440	1.240	1.000	1.490	1.710	2.158	1.507	1.126	
79	\$524.80	\$656.00	1.000	1.360	1.520	1.420	1.230	1.000	1.470	1.680	2.173	1.513	1.128	
80	\$576.00	\$720.00	1.000	1.350	1.500	1.400	1.220	1.000	1.450	1.650	2.187	1.518	1.130	
81	\$627.20	\$784.00	1.000	1.340	1.490	1.380	1.210	1.000	1.430	1.630	2.201	1.524	1.132	
82	\$678.40	\$848.00	1.000	1.330	1.480	1.360	1.200	1.000	1.410	1.610	2.215	1.529	1.134	
83	\$739.20	\$924.00	1.000	1.320	1.470	1.340	1.190	1.000	1.390	1.590	2.230	1.535	1.136	
84	\$800.00	\$1,000.00	1.000	1.310	1.460	1.320	1.180	1.000	1.370	1.570	2.244	1.540	1.138	

Multi-Life Discounts		Factor
Employer or Association Iss Age < 65		0.850
Employer or Association Iss Age >= 65		0.900
Home Office and Career Agents Iss Age < 65		0.800
Home Office and Career Agents Iss Age >= 65		0.850
Individual Underwriting Classes		Factor
Ultra Preferred		0.800
Preferred		1.000
Standard		1.250
Joint Policy Factor		1.500
Joint Risk Class		Factor
2 Ultra Preferred		0.800
1 Ultra Preferred and 1 Preferred		0.900
1 Ultra Preferred and 1 Standard		1.025
2 Preferred		1.000
1 Preferred and 1 Standard		1.125
2 Standard		1.250
Benefit Type		Factor
Daily Reimbursement		1.000
Home and Community Based Services (HCBS)		1.200
Enhancement Rider		
Indemnity Rider		1.200
Caregiver Indemnity Rider		2.000
Elimination Period		Factor
0 Day		1.300
30 Day		1.150
60 Day		1.000
90 Day		1.000
180 Day		1.000
Benefit Period		Factor
3 Year		0.650
4 Year		N/A
5 Year		N/A
6 Year		0.900
10 Year		N/A
Lifetime		1.000
Payment Mode		Factor
Annual		1.000
Semi-Annual		0.520
Quarterly		0.270
Monthly - Pre-Authorized Check		0.085
Discounted Renewal Premium Factor		0.750

**Massachusetts Mutual Life Insurance Company**  
**200 Series with 2001 Revised Rates**  
**Current Premium Rates**

Issue Age	Annual Base Rates		Premium Factors											HCBS Prem Wvr
	per \$10 of Daily Benefit Amount		Lifetime Pay Inflation Protection			Limited Pay		Limited Pay Inflation Protection			Nonforfeiture			
	Facility Only	Comprehensive	None	5% Simple	5% Compound	10 Year	20 Year	None	5% Simple	5% Compound	Full	Shortened BP		
18	\$35.20	\$44.00	1.000	1.750	2.400	2.500	1.620	1.000	2.727	3.864	1.472	1.243	1.030	
19	\$35.20	\$44.00	1.000	1.750	2.400	2.500	1.620	1.000	2.727	3.864	1.472	1.243	1.030	
20	\$35.20	\$44.00	1.000	1.750	2.400	2.500	1.620	1.000	2.727	3.864	1.472	1.243	1.030	
21	\$35.20	\$44.00	1.000	1.750	2.400	2.500	1.620	1.000	2.727	3.864	1.472	1.243	1.030	
22	\$35.20	\$44.00	1.000	1.750	2.400	2.500	1.620	1.000	2.727	3.864	1.472	1.243	1.030	
23	\$35.20	\$44.00	1.000	1.750	2.400	2.500	1.620	1.000	2.727	3.864	1.472	1.243	1.030	
24	\$35.20	\$44.00	1.000	1.750	2.400	2.500	1.620	1.000	2.727	3.864	1.472	1.243	1.030	
25	\$35.20	\$44.00	1.000	1.750	2.400	2.500	1.620	1.000	2.727	3.864	1.472	1.243	1.030	
26	\$35.20	\$44.00	1.000	1.750	2.400	2.500	1.620	1.000	2.727	3.864	1.472	1.243	1.030	
27	\$35.20	\$44.00	1.000	1.750	2.400	2.500	1.620	1.000	2.727	3.864	1.472	1.243	1.030	
28	\$35.20	\$44.00	1.000	1.750	2.400	2.500	1.620	1.000	2.727	3.864	1.472	1.243	1.030	
29	\$35.20	\$44.00	1.000	1.750	2.400	2.500	1.620	1.000	2.727	3.864	1.472	1.243	1.030	
30	\$35.20	\$44.00	1.000	1.750	2.400	2.500	1.620	1.000	2.727	3.864	1.472	1.243	1.030	
31	\$35.20	\$44.00	1.000	1.750	2.400	2.500	1.620	1.000	2.727	3.864	1.472	1.243	1.030	
32	\$35.20	\$44.00	1.000	1.750	2.400	2.500	1.620	1.000	2.727	3.864	1.472	1.243	1.030	
33	\$35.20	\$44.00	1.000	1.750	2.400	2.500	1.620	1.000	2.727	3.864	1.472	1.243	1.030	
34	\$35.20	\$44.00	1.000	1.750	2.400	2.500	1.620	1.000	2.727	3.864	1.472	1.243	1.030	
35	\$35.20	\$44.00	1.000	1.750	2.400	2.500	1.620	1.000	2.727	3.864	1.472	1.243	1.030	
36	\$35.20	\$44.00	1.000	1.750	2.400	2.500	1.620	1.000	2.727	3.864	1.472	1.243	1.030	
37	\$35.20	\$44.00	1.000	1.750	2.400	2.500	1.620	1.000	2.727	3.864	1.472	1.243	1.030	
38	\$35.20	\$44.00	1.000	1.750	2.400	2.500	1.620	1.000	2.727	3.864	1.472	1.243	1.030	
39	\$35.20	\$44.00	1.000	1.750	2.400	2.500	1.620	1.000	2.727	3.864	1.472	1.243	1.030	
40	\$35.20	\$44.00	1.000	1.750	2.400	2.500	1.620	1.000	2.727	3.864	1.472	1.243	1.030	
41	\$36.00	\$45.00	1.000	1.726	2.380	2.480	1.610	1.000	2.651	3.781	1.486	1.249	1.032	
42	\$36.80	\$46.00	1.000	1.702	2.360	2.460	1.600	1.000	2.575	3.698	1.500	1.254	1.034	
43	\$37.60	\$47.00	1.000	1.678	2.340	2.440	1.590	1.000	2.498	3.614	1.515	1.260	1.036	
44	\$38.40	\$48.00	1.000	1.654	2.320	2.420	1.580	1.000	2.420	3.529	1.529	1.265	1.038	
45	\$39.20	\$49.00	1.000	1.630	2.300	2.400	1.570	1.000	2.342	3.444	1.543	1.271	1.040	
46	\$40.80	\$51.00	1.000	1.612	2.280	2.380	1.560	1.000	2.219	3.310	1.558	1.276	1.042	
47	\$42.40	\$53.00	1.000	1.594	2.260	2.360	1.550	1.000	2.102	3.184	1.572	1.282	1.044	
48	\$44.00	\$55.00	1.000	1.583	2.240	2.340	1.540	1.000	1.990	3.063	1.586	1.287	1.046	
49	\$45.60	\$57.00	1.000	1.571	2.220	2.320	1.530	1.000	1.921	3.009	1.601	1.293	1.048	
50	\$47.20	\$59.00	1.000	1.559	2.200	2.300	1.520	1.000	1.851	2.997	1.615	1.298	1.050	
51	\$48.80	\$61.00	1.000	1.547	2.180	2.280	1.510	1.000	1.841	2.948	1.629	1.304	1.052	
52	\$50.40	\$63.00	1.000	1.535	2.160	2.260	1.500	1.000	1.831	2.898	1.643	1.309	1.054	
53	\$52.00	\$65.00	1.000	1.526	2.140	2.240	1.490	1.000	1.852	2.896	1.658	1.315	1.056	
54	\$53.60	\$67.00	1.000	1.517	2.120	2.220	1.480	1.000	1.869	2.887	1.672	1.320	1.058	
55	\$55.20	\$69.00	1.000	1.508	2.100	2.200	1.470	1.000	1.884	2.873	1.686	1.326	1.060	
56	\$59.20	\$74.00	1.000	1.499	2.060	2.180	1.460	1.000	1.819	2.729	1.701	1.331	1.062	
57	\$63.20	\$79.00	1.000	1.493	2.020	2.160	1.450	1.000	1.762	2.597	1.715	1.337	1.064	
58	\$67.20	\$84.00	1.000	1.487	1.980	2.140	1.440	1.000	1.709	2.475	1.729	1.342	1.066	
59	\$71.20	\$89.00	1.000	1.481	1.940	2.120	1.430	1.000	1.683	2.393	1.744	1.348	1.068	
60	\$75.20	\$94.00	1.000	1.475	1.900	2.100	1.420	1.000	1.657	2.312	1.758	1.353	1.070	
61	\$84.80	\$106.00	1.000	1.469	1.880	2.080	1.410	1.000	1.685	2.303	1.772	1.359	1.072	
62	\$94.40	\$118.00	1.000	1.466	1.860	2.060	1.400	1.000	1.702	2.279	1.786	1.364	1.074	
63	\$100.80	\$126.00	1.000	1.463	1.840	2.040	1.390	1.000	1.694	2.219	1.801	1.370	1.076	
64	\$105.60	\$132.00	1.000	1.460	1.820	2.020	1.380	1.000	1.710	2.189	1.815	1.375	1.078	
65	\$110.40	\$138.00	1.000	1.457	1.800	2.000	1.370	1.000	1.722	2.152	1.844	1.386	1.080	
66	\$130.40	\$163.00	1.000	1.454	1.780	1.950	1.360	1.000	1.705	2.119	1.872	1.397	1.082	
67	\$150.40	\$188.00	1.000	1.451	1.760	1.900	1.350	1.000	1.684	2.081	1.901	1.408	1.084	
68	\$161.60	\$202.00	1.000	1.445	1.740	1.850	1.340	1.000	1.676	2.058	1.929	1.419	1.086	
69	\$172.80	\$216.00	1.000	1.439	1.720	1.800	1.330	1.000	1.664	2.031	1.958	1.430	1.088	
70	\$184.00	\$230.00	1.000	1.436	1.700	1.750	1.320	1.000	1.650	2.000	1.987	1.441	1.090	
71	\$211.20	\$264.00	1.000	1.433	1.680	1.700	1.310	1.000	1.630	1.950	2.015	1.452	1.092	
72	\$238.40	\$298.00	1.000	1.430	1.660	1.650	1.300	1.000	1.610	1.900	2.044	1.463	1.094	
73	\$265.60	\$332.00	1.000	1.420	1.640	1.600	1.290	1.000	1.590	1.850	2.072	1.474	1.096	
74	\$292.80	\$366.00	1.000	1.410	1.620	1.550	1.280	1.000	1.570	1.800	2.101	1.485	1.098	
75	\$320.00	\$400.00	1.000	1.400	1.600	1.500	1.270	1.000	1.550	1.800	2.115	1.491	1.100	
76	\$371.20	\$464.00	1.000	1.390	1.580	1.480	1.260	1.000	1.530	1.770	2.130	1.496	1.102	
77	\$422.40	\$528.00	1.000	1.380	1.560	1.460	1.250	1.000	1.510	1.740	2.144	1.502	1.104	
78	\$473.60	\$592.00	1.000	1.370	1.540	1.440	1.240	1.000	1.490	1.710	2.158	1.507	1.106	
79	\$524.80	\$656.00	1.000	1.360	1.520	1.420	1.230	1.000	1.470	1.680	2.173	1.513	1.108	
80	\$576.00	\$720.00	1.000	1.350	1.500	1.400	1.220	1.000	1.450	1.650	2.187	1.518	1.110	
81	\$627.20	\$784.00	1.000	1.340	1.490	1.380	1.210	1.000	1.430	1.630	2.201	1.524	1.112	
82	\$678.40	\$848.00	1.000	1.330	1.480	1.360	1.200	1.000	1.410	1.610	2.215	1.529	1.114	
83	\$739.20	\$924.00	1.000	1.320	1.470	1.340	1.190	1.000	1.390	1.590	2.230	1.535	1.116	
84	\$800.00	\$1,000.00	1.000	1.310	1.460	1.320	1.180	1.000	1.370	1.570	2.244	1.540	1.118	

Multi-Life Discounts		Factor
Employer or Association Iss Age < 65		0.850
Employer or Association Iss Age >= 65		0.900
Home Office and Career Agents Iss Age < 65		0.800
Home Office and Career Agents Iss Age >= 65		0.850
Individual Underwriting Classes		Factor
Ultra Preferred		0.800
Preferred		1.000
Standard		1.250
Joint Policy Factor		1.500
Joint Risk Class		Factor
2 Ultra Preferred		0.800
1 Ultra Preferred and 1 Preferred		0.900
1 Ultra Preferred and 1 Standard		1.025
2 Preferred		1.000
1 Preferred and 1 Standard		1.125
2 Standard		1.250
Benefit Type		Factor
Daily Reimbursement		1.000
Home and Community Based Services (HCBS)		1.200
Enhancement Rider		
Indemnity Rider		1.200
Caregiver Indemnity Rider		2.000
Elimination Period		Factor
0 Day		1.300
30 Day		1.150
60 Day		1.000
90 Day		1.000
180 Day		1.000
Benefit Period		Factor
3 Year		0.650
4 Year		N/A
5 Year		N/A
6 Year		0.900
10 Year		N/A
Lifetime		1.000
Payment Mode		Factor
Annual		1.000
Semi-Annual		0.520
Quarterly		0.270
Monthly - Pre-Authorized Check		0.085
Discounted Renewal Premium Factor		0.750

**Massachusetts Mutual Life Insurance Company**

**300 Series**

**Current Premium Rates**

Issue Age	Annual Base Rates			Premium Factors										
	per \$10 of Daily Benefit Amount			Lifetime Pay Inflation Protection			Limited Pay		Limited Pay Inflation Protection			Nonforfeiture		Paid-Up Survivor
	Facility Only	Comprehensive		None	5% Simple	5% Compound	10 Year	20 Year	None	5% Simple	5% Compound	Full	Shortened BP	
18	\$35.20	\$44.00		1.000	1.750	2.400	2.500	1.620	1.000	2.727	3.864	1.472	1.243	1.400
19	\$35.20	\$44.00		1.000	1.750	2.400	2.500	1.620	1.000	2.727	3.864	1.472	1.243	1.400
20	\$35.20	\$44.00		1.000	1.750	2.400	2.500	1.620	1.000	2.727	3.864	1.472	1.243	1.400
21	\$35.20	\$44.00		1.000	1.750	2.400	2.500	1.620	1.000	2.727	3.864	1.472	1.243	1.400
22	\$35.20	\$44.00		1.000	1.750	2.400	2.500	1.620	1.000	2.727	3.864	1.472	1.243	1.400
23	\$35.20	\$44.00		1.000	1.750	2.400	2.500	1.620	1.000	2.727	3.864	1.472	1.243	1.400
24	\$35.20	\$44.00		1.000	1.750	2.400	2.500	1.620	1.000	2.727	3.864	1.472	1.243	1.400
25	\$35.20	\$44.00		1.000	1.750	2.400	2.500	1.620	1.000	2.727	3.864	1.472	1.243	1.400
26	\$35.20	\$44.00		1.000	1.750	2.400	2.500	1.620	1.000	2.727	3.864	1.472	1.243	1.400
27	\$35.20	\$44.00		1.000	1.750	2.400	2.500	1.620	1.000	2.727	3.864	1.472	1.243	1.400
28	\$35.20	\$44.00		1.000	1.750	2.400	2.500	1.620	1.000	2.727	3.864	1.472	1.243	1.400
29	\$35.20	\$44.00		1.000	1.750	2.400	2.500	1.620	1.000	2.727	3.864	1.472	1.243	1.400
30	\$35.20	\$44.00		1.000	1.750	2.400	2.500	1.620	1.000	2.727	3.864	1.472	1.243	1.400
31	\$35.20	\$44.00		1.000	1.750	2.400	2.500	1.620	1.000	2.727	3.864	1.472	1.243	1.400
32	\$35.20	\$44.00		1.000	1.750	2.400	2.500	1.620	1.000	2.727	3.864	1.472	1.243	1.400
33	\$35.20	\$44.00		1.000	1.750	2.400	2.500	1.620	1.000	2.727	3.864	1.472	1.243	1.400
34	\$35.20	\$44.00		1.000	1.750	2.400	2.500	1.620	1.000	2.727	3.864	1.472	1.243	1.400
35	\$35.20	\$44.00		1.000	1.750	2.400	2.500	1.620	1.000	2.727	3.864	1.472	1.243	1.400
36	\$35.20	\$44.00		1.000	1.750	2.400	2.500	1.620	1.000	2.727	3.864	1.472	1.243	1.400
37	\$35.20	\$44.00		1.000	1.750	2.400	2.500	1.620	1.000	2.727	3.864	1.472	1.243	1.400
38	\$35.20	\$44.00		1.000	1.750	2.400	2.500	1.620	1.000	2.727	3.864	1.472	1.243	1.400
39	\$35.20	\$44.00		1.000	1.750	2.400	2.500	1.620	1.000	2.727	3.864	1.472	1.243	1.400
40	\$35.20	\$44.00		1.000	1.750	2.400	2.500	1.620	1.000	2.727	3.864	1.472	1.243	1.400
41	\$36.00	\$45.00		1.000	1.726	2.380	2.480	1.610	1.000	2.651	3.781	1.486	1.249	1.400
42	\$36.80	\$46.00		1.000	1.702	2.360	2.460	1.600	1.000	2.575	3.698	1.500	1.254	1.400
43	\$37.60	\$47.00		1.000	1.678	2.340	2.440	1.590	1.000	2.498	3.614	1.515	1.260	1.400
44	\$38.40	\$48.00		1.000	1.654	2.320	2.420	1.580	1.000	2.420	3.529	1.529	1.265	1.400
45	\$39.20	\$49.00		1.000	1.630	2.300	2.400	1.570	1.000	2.342	3.444	1.543	1.271	1.400
46	\$40.80	\$51.00		1.000	1.612	2.280	2.380	1.560	1.000	2.219	3.310	1.558	1.276	1.400
47	\$42.40	\$53.00		1.000	1.594	2.260	2.360	1.550	1.000	2.102	3.184	1.572	1.282	1.400
48	\$44.00	\$55.00		1.000	1.583	2.240	2.340	1.540	1.000	1.990	3.063	1.586	1.287	1.400
49	\$45.60	\$57.00		1.000	1.571	2.220	2.320	1.530	1.000	1.921	3.009	1.601	1.293	1.400
50	\$47.20	\$59.00		1.000	1.559	2.200	2.300	1.520	1.000	1.851	2.997	1.615	1.298	1.400
51	\$48.80	\$61.00		1.000	1.547	2.180	2.280	1.510	1.000	1.841	2.948	1.629	1.304	1.400
52	\$50.40	\$63.00		1.000	1.535	2.160	2.260	1.500	1.000	1.831	2.898	1.643	1.309	1.400
53	\$52.00	\$65.00		1.000	1.526	2.140	2.240	1.490	1.000	1.852	2.896	1.658	1.315	1.400
54	\$53.60	\$67.00		1.000	1.517	2.120	2.220	1.480	1.000	1.869	2.887	1.672	1.320	1.400
55	\$55.20	\$69.00		1.000	1.508	2.100	2.200	1.470	1.000	1.884	2.873	1.686	1.326	1.400
56	\$59.20	\$74.00		1.000	1.499	2.060	2.180	1.460	1.000	1.819	2.729	1.701	1.331	1.400
57	\$63.20	\$79.00		1.000	1.493	2.020	2.160	1.450	1.000	1.762	2.597	1.715	1.337	1.400
58	\$67.20	\$84.00		1.000	1.487	1.980	2.140	1.440	1.000	1.709	2.475	1.729	1.342	1.400
59	\$71.20	\$89.00		1.000	1.481	1.940	2.120	1.430	1.000	1.683	2.393	1.744	1.348	1.400
60	\$75.20	\$94.00		1.000	1.475	1.900	2.100	1.420	1.000	1.657	2.312	1.758	1.353	1.400
61	\$84.80	\$106.00		1.000	1.469	1.880	2.080	1.410	1.000	1.685	2.303	1.772	1.359	1.400
62	\$94.40	\$118.00		1.000	1.466	1.860	2.060	1.400	1.000	1.702	2.279	1.786	1.364	1.400
63	\$100.80	\$126.00		1.000	1.463	1.840	2.040	1.390	1.000	1.694	2.219	1.801	1.370	1.400
64	\$105.60	\$132.00		1.000	1.460	1.820	2.020	1.380	1.000	1.710	2.189	1.815	1.375	1.400
65	\$110.40	\$138.00		1.000	1.457	1.800	2.000	1.370	1.000	1.722	2.152	1.844	1.386	1.400
66	\$130.40	\$163.00		1.000	1.454	1.780	1.950	1.360	1.000	1.705	2.119	1.872	1.397	1.390
67	\$150.40	\$188.00		1.000	1.451	1.760	1.900	1.350	1.000	1.684	2.081	1.901	1.408	1.380
68	\$161.60	\$202.00		1.000	1.445	1.740	1.850	1.340	1.000	1.676	2.058	1.929	1.419	1.370
69	\$172.80	\$216.00		1.000	1.439	1.720	1.800	1.330	1.000	1.664	2.031	1.958	1.430	1.360
70	\$184.00	\$230.00		1.000	1.436	1.700	1.750	1.320	1.000	1.650	2.000	1.987	1.441	1.350
71	\$211.20	\$264.00		1.000	1.433	1.680	1.700	1.310	1.000	1.630	1.950	2.015	1.452	1.340
72	\$238.40	\$298.00		1.000	1.430	1.660	1.650	1.300	1.000	1.610	1.900	2.044	1.463	1.330
73	\$265.60	\$332.00		1.000	1.420	1.640	1.600	1.290	1.000	1.590	1.850	2.072	1.474	1.320
74	\$292.80	\$366.00		1.000	1.410	1.620	1.550	1.280	1.000	1.570	1.800	2.101	1.485	1.310
75	\$320.00	\$400.00		1.000	1.400	1.600	1.500	1.270	1.000	1.550	1.800	2.115	1.491	1.300
76	\$371.20	\$464.00		1.000	1.390	1.580	1.480	1.260	1.000	1.530	1.770	2.130	1.496	1.300
77	\$422.40	\$528.00		1.000	1.380	1.560	1.460	1.250	1.000	1.510	1.740	2.144	1.502	1.300
78	\$473.60	\$592.00		1.000	1.370	1.540	1.440	1.240	1.000	1.490	1.710	2.158	1.507	1.300
79	\$524.80	\$656.00		1.000	1.360	1.520	1.420	1.230	1.000	1.470	1.680	2.173	1.513	1.300
80	\$576.00	\$720.00		1.000	1.350	1.500	1.400	1.220	1.000	1.450	1.650	2.187	1.518	1.300
81	\$627.20	\$784.00		1.000	1.340	1.490	1.380	1.210	1.000	1.430	1.630	2.201	1.524	1.300
82	\$678.40	\$848.00		1.000	1.330	1.480	1.360	1.200	1.000	1.410	1.610	2.215	1.529	1.300
83	\$739.20	\$924.00		1.000	1.320	1.470	1.340	1.190	1.000	1.390	1.590	2.230	1.535	1.300
84	\$800.00	\$1,000.00		1.000	1.310	1.460	1.320	1.180	1.000	1.370	1.570	2.244	1.540	1.300

Discounts	Factor
Multi-Life	0.900

Individual Underwriting Classes	Factor
Ultra Preferred	0.800
Preferred	1.000
Standard	1.250

Joint Policy Factor	1.500
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Joint Risk Class	Factor
2 Ultra Preferred	0.800
1 Ultra Preferred and 1 Preferred	0.900
1 Ultra Preferred and 1 Standard	1.025
2 Preferred	1.000
1 Preferred and 1 Standard	1.125
2 Standard	1.250

Benefit Type	Factor
Daily Reimbursement	1.000
Home and Community Based Services (HCBS) Enhancement Rider	1.200
Indemnity Rider	1.150
Caregiver Indemnity Rider	2.000

Elimination Period	Factor
0 Day	1.300
30 Day	1.150
60 Day	1.000
90 Day	1.000
180 Day	0.900

Benefit Period	Premium Factor	Rider	
		Restoration of Benefits	Limited Family Care Giver
3 Year	0.630	1.063	1.200
4 Year	0.780	1.051	1.150
5 Year	N/A	N/A	N/A
6 Year	0.880	1.034	1.100
10 Year	N/A	N/A	N/A
Lifetime	1.000	1.010	1.100

Payment Mode	Factor
Annual	1.000
Semi-Annual	0.520
Quarterly	0.270
Monthly - Pre-Authorized Check	0.085
Monthly - Credit Card	0.095

Discounted Renewal Premium Factor	0.750
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**Massachusetts Mutual Life Insurance Company**

**400 Series**

**Current Premium Rates**

Issue Age	Annual Base Rates			Premium Factors										
	per \$10 of Daily Benefit Amount			Lifetime Pay Inflation Protection			Limited Pay		Limited Pay Inflation Protection			Nonforfeiture		Paid-Up Survivor
	Facility Only	Comprehensive		None	5% Simple	5% Compound	10 Year	20 Year	None	5% Simple	5% Compound	Full	Shortened BP	
18	\$44.00	\$55.00	1.000	2.552	3.500	3.000	1.900	1.900	1.000	3.176	4.500	1.800	1.200	1.400
19	\$44.00	\$55.00	1.000	2.552	3.500	3.000	1.900	1.900	1.000	3.176	4.500	1.800	1.200	1.400
20	\$44.00	\$55.00	1.000	2.552	3.500	3.000	1.900	1.900	1.000	3.176	4.500	1.800	1.200	1.400
21	\$44.00	\$55.00	1.000	2.552	3.500	3.000	1.900	1.900	1.000	3.176	4.500	1.800	1.200	1.400
22	\$44.00	\$55.00	1.000	2.552	3.500	3.000	1.900	1.900	1.000	3.176	4.500	1.800	1.200	1.400
23	\$44.00	\$55.00	1.000	2.552	3.500	3.000	1.900	1.900	1.000	3.176	4.500	1.800	1.200	1.400
24	\$44.00	\$55.00	1.000	2.552	3.500	3.000	1.900	1.900	1.000	3.176	4.500	1.800	1.200	1.400
25	\$44.00	\$55.00	1.000	2.552	3.500	3.000	1.900	1.900	1.000	3.176	4.500	1.800	1.200	1.400
26	\$44.00	\$55.00	1.000	2.552	3.500	3.000	1.900	1.900	1.000	3.176	4.500	1.800	1.200	1.400
27	\$44.00	\$55.00	1.000	2.552	3.500	3.000	1.900	1.900	1.000	3.176	4.500	1.800	1.200	1.400
28	\$44.00	\$55.00	1.000	2.552	3.500	3.000	1.900	1.900	1.000	3.176	4.500	1.800	1.200	1.400
29	\$44.00	\$55.00	1.000	2.552	3.500	3.000	1.900	1.900	1.000	3.176	4.500	1.800	1.200	1.400
30	\$44.00	\$55.00	1.000	2.552	3.500	3.000	1.900	1.900	1.000	3.176	4.500	1.800	1.200	1.400
31	\$44.00	\$55.00	1.000	2.552	3.500	3.000	1.900	1.900	1.000	3.176	4.500	1.800	1.200	1.400
32	\$44.00	\$55.00	1.000	2.552	3.500	3.000	1.900	1.900	1.000	3.176	4.500	1.800	1.200	1.400
33	\$44.00	\$55.00	1.000	2.552	3.500	3.000	1.900	1.900	1.000	3.176	4.500	1.800	1.200	1.400
34	\$44.00	\$55.00	1.000	2.552	3.500	3.000	1.900	1.900	1.000	3.176	4.500	1.800	1.200	1.400
35	\$44.00	\$55.00	1.000	2.552	3.500	3.000	1.900	1.900	1.000	3.176	4.500	1.800	1.200	1.400
36	\$44.00	\$55.00	1.000	2.552	3.500	3.000	1.900	1.900	1.000	3.176	4.500	1.800	1.200	1.400
37	\$44.00	\$55.00	1.000	2.552	3.500	3.000	1.900	1.900	1.000	3.176	4.500	1.800	1.200	1.400
38	\$44.00	\$55.00	1.000	2.552	3.500	3.000	1.900	1.900	1.000	3.176	4.500	1.800	1.200	1.400
39	\$44.00	\$55.00	1.000	2.552	3.500	3.000	1.900	1.900	1.000	3.176	4.500	1.800	1.200	1.400
40	\$44.00	\$55.00	1.000	2.552	3.500	3.000	1.900	1.900	1.000	3.176	4.500	1.800	1.200	1.400
41	\$44.80	\$56.00	1.000	2.502	3.450	2.960	1.880	1.880	1.000	3.085	4.400	1.810	1.210	1.400
42	\$46.60	\$57.00	1.000	2.452	3.400	2.920	1.860	1.860	1.000	2.994	4.300	1.820	1.220	1.400
43	\$46.40	\$58.00	1.000	2.402	3.350	2.880	1.840	1.840	1.000	2.903	4.200	1.830	1.230	1.400
44	\$47.20	\$59.00	1.000	2.353	3.300	2.840	1.820	1.820	1.000	2.812	4.100	1.840	1.240	1.400
45	\$48.00	\$60.00	1.000	2.303	3.250	2.800	1.800	1.800	1.000	2.720	4.000	1.850	1.250	1.400
46	\$49.60	\$62.00	1.000	2.227	3.150	2.760	1.780	1.780	1.000	2.615	3.900	1.870	1.260	1.400
47	\$51.20	\$64.00	1.000	2.151	3.050	2.720	1.760	1.760	1.000	2.509	3.800	1.890	1.270	1.400
48	\$52.80	\$66.00	1.000	2.085	2.950	2.680	1.740	1.740	1.000	2.404	3.700	1.910	1.280	1.400
49	\$54.40	\$68.00	1.000	2.017	2.850	2.640	1.720	1.720	1.000	2.298	3.600	1.930	1.290	1.400
50	\$56.00	\$70.00	1.000	1.949	2.750	2.600	1.700	1.700	1.000	2.162	3.500	1.950	1.300	1.400
51	\$58.40	\$73.00	1.000	1.916	2.700	2.560	1.680	1.680	1.000	2.123	3.400	1.970	1.310	1.400
52	\$60.80	\$76.00	1.000	1.883	2.650	2.520	1.660	1.660	1.000	2.085	3.300	1.990	1.320	1.400
53	\$63.20	\$79.00	1.000	1.854	2.600	2.480	1.640	1.640	1.000	2.046	3.200	2.010	1.330	1.400
54	\$65.60	\$82.00	1.000	1.825	2.550	2.440	1.620	1.620	1.000	2.007	3.100	2.030	1.340	1.400
55	\$68.00	\$85.00	1.000	1.795	2.500	2.400	1.600	1.600	1.000	1.967	3.000	2.050	1.350	1.400
56	\$73.60	\$92.00	1.000	1.783	2.450	2.360	1.580	1.580	1.000	1.933	2.900	2.070	1.360	1.400
57	\$79.20	\$99.00	1.000	1.774	2.400	2.320	1.560	1.560	1.000	1.900	2.800	2.090	1.370	1.400
58	\$84.80	\$106.00	1.000	1.765	2.350	2.280	1.540	1.540	1.000	1.864	2.700	2.110	1.380	1.400
59	\$90.40	\$113.00	1.000	1.756	2.300	2.240	1.520	1.520	1.000	1.829	2.600	2.130	1.390	1.400
60	\$96.00	\$120.00	1.000	1.747	2.250	2.200	1.500	1.500	1.000	1.792	2.500	2.150	1.400	1.400
61	\$103.20	\$129.00	1.000	1.719	2.200	2.160	1.480	1.480	1.000	1.793	2.450	2.170	1.410	1.400
62	\$110.40	\$138.00	1.000	1.695	2.150	2.120	1.460	1.460	1.000	1.792	2.400	2.190	1.420	1.400
63	\$117.60	\$147.00	1.000	1.670	2.100	2.080	1.440	1.440	1.000	1.794	2.350	2.210	1.430	1.400
64	\$124.80	\$156.00	1.000	1.645	2.050	2.040	1.420	1.420	1.000	1.797	2.300	2.230	1.440	1.400
65	\$132.00	\$165.00	1.000	1.619	2.000	2.000	1.400	1.400	1.000	1.800	2.250	2.250	1.450	1.400
66	\$148.80	\$186.00	1.000	1.593	1.950	1.950	1.390	1.390	1.000	1.770	2.200	2.280	1.460	1.390
67	\$165.60	\$207.00	1.000	1.566	1.900	1.900	1.380	1.380	1.000	1.740	2.150	2.310	1.470	1.380
68	\$182.40	\$228.00	1.000	1.536	1.850	1.850	1.370	1.370	1.000	1.710	2.100	2.340	1.480	1.370
69	\$199.20	\$249.00	1.000	1.506	1.800	1.800	1.360	1.360	1.000	1.680	2.050	2.370	1.490	1.360
70	\$216.00	\$270.00	1.000	1.478	1.750	1.750	1.350	1.350	1.000	1.650	2.000	2.400	1.500	1.350
71	\$244.80	\$306.00	1.000	1.467	1.720	1.700	1.340	1.340	1.000	1.638	1.960	2.430	1.510	1.340
72	\$273.60	\$342.00	1.000	1.456	1.690	1.650	1.330	1.330	1.000	1.627	1.920	2.460	1.520	1.330
73	\$302.40	\$378.00	1.000	1.437	1.660	1.600	1.320	1.320	1.000	1.616	1.880	2.490	1.530	1.320
74	\$331.20	\$414.00	1.000	1.419	1.630	1.550	1.310	1.310	1.000	1.605	1.840	2.520	1.540	1.310
75	\$360.00	\$450.00	1.000	1.400	1.600	1.500	1.300	1.300	1.000	1.550	1.800	2.550	1.550	1.300
76	\$412.80	\$516.00	1.000	1.390	1.580	1.480	1.290	1.290	1.000	1.530	1.770	2.580	1.560	1.300
77	\$465.60	\$582.00	1.000	1.380	1.560	1.460	1.280	1.280	1.000	1.510	1.740	2.610	1.570	1.300
78	\$518.40	\$648.00	1.000	1.370	1.540	1.440	1.270	1.270	1.000	1.490	1.710	2.640	1.580	1.300
79	\$571.20	\$714.00	1.000	1.360	1.520	1.420	1.260	1.260	1.000	1.470	1.680	2.670	1.590	1.300
80	\$624.00	\$780.00	1.000	1.350	1.500	1.400	1.250	1.250	1.000	1.450	1.650	2.700	1.600	1.300
81	\$676.80	\$846.00	1.000	1.340	1.490	1.380	1.240	1.240	1.000	1.430	1.630	2.730	1.610	1.300
82	\$729.60	\$912.00	1.000	1.330	1.480	1.360	1.230	1.230	1.000	1.410	1.610	2.760	1.620	1.300
83	\$782.40	\$978.00	1.000	1.320	1.470	1.340	1.220	1.220	1.000	1.390	1.590	2.790	1.630	1.300
84	\$835.20	\$1,044.00	1.000	1.310	1.460	1.320	1.210	1.210	1.000	1.370	1.570	2.820	1.640	1.300

Discounts	Factor
Multi-Life	0.900

Individual Underwriting Classes	Factor
Ultra Preferred	0.750
Preferred	1.000
Standard	1.250

Joint Policy Factor	1.300
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Joint Risk Class	Factor
2 Ultra Preferred	0.750
1 Ultra Preferred and 1 Preferred	0.875
1 Ultra Preferred and 1 Standard	1.000
2 Preferred	1.000
1 Preferred and 1 Standard	1.125
2 Standard	1.250

Benefit Type	Factor
Daily Reimbursement	1.000
Monthly Home and Community Based Services (HCBS) Rider	1.120
Indemnity Rider	1.150

		Elimination Period Rider	
Elimination Period	Factor	Enhanced EP	HCBS First Day Coverage
0 Day	1.300	N/A	1.000
30 Day	1.150	N/A	1.080
60 Day	1.000	N/A	1.160
90 Day	1.000	N/A	1.160
180 Day	0.900	N/A	1.200

Rider			
Benefit Period	Premium Factor	Restoration of Benefits	Limited Family Care Giver
3 Year	0.630	1.063	1.200
4 Year	0.780	1.051	1.150
5 Year	0.850	1.047	1.120
6 Year	0.880	1.034	1.100
10 Year	0.950	1.011	1.100
Lifetime	1.000	N/A	1.100

Payment Mode	Factor
Annual	1.000
Semi-Annual	0.520
Quarterly	0.270
Monthly - Pre-Authorized Check	0.088

**Massachusetts Mutual Life Insurance Company**  
**500 Series**  
**Current Premium Rates**

Annual Base Rates			Premium Factors																	Discounts		Factor		
Issue Age	per \$10 of Daily Benefit Amount		Inflation Protection				10 Year Paid Up				Paid Up at 65				Nonforfeiture	Return of Premium		Cov Part	Paid-Up	Single Partner	Covered Partner	Multi-Product	Multi-Life	
	Facility Only	Comprehensive	None	5% Simple	3% Compound	5% Compound	None	5% Simple	3% Compound	5% Compound	None	5% Simple	3% Compound	5% Compound	Shortened BP	Less Claims	Full	Prem Waiv	Survivor					
18	\$75.80	\$89.20	1.000	1.659	1.905	2.610	2.916	3.030	3.072	3.170	1.580	1.645	1.667	1.715	1.322	1.250	1.470	1.020	1.086					1.000
19	\$75.80	\$89.20	1.000	1.659	1.905	2.610	2.916	3.030	3.072	3.170	1.580	1.645	1.667	1.715	1.322	1.250	1.470	1.020	1.086					0.950
20	\$75.80	\$89.20	1.000	1.659	1.905	2.610	2.916	3.030	3.072	3.170	1.580	1.645	1.667	1.715	1.322	1.250	1.470	1.020	1.086					0.650
21	\$75.80	\$89.20	1.000	1.659	1.905	2.610	2.916	3.030	3.072	3.170	1.580	1.645	1.667	1.715	1.322	1.250	1.470	1.020	1.086					0.950
22	\$75.80	\$89.20	1.000	1.659	1.905	2.610	2.916	3.030	3.072	3.170	1.580	1.645	1.667	1.715	1.322	1.250	1.470	1.020	1.086					0.900
23	\$75.80	\$89.20	1.000	1.659	1.905	2.610	2.916	3.030	3.072	3.170	1.580	1.645	1.667	1.715	1.322	1.250	1.470	1.020	1.086					
24	\$75.80	\$89.20	1.000	1.659	1.905	2.610	2.916	3.030	3.072	3.170	1.580	1.645	1.667	1.715	1.322	1.250	1.470	1.020	1.086					
25	\$75.80	\$89.20	1.000	1.659	1.905	2.610	2.916	3.030	3.072	3.170	1.580	1.645	1.667	1.715	1.322	1.250	1.470	1.020	1.086					
26	\$75.80	\$89.20	1.000	1.659	1.905	2.610	2.916	3.030	3.072	3.170	1.580	1.645	1.667	1.715	1.322	1.250	1.470	1.020	1.086					
27	\$75.80	\$89.20	1.000	1.659	1.905	2.610	2.916	3.030	3.072	3.170	1.580	1.645	1.667	1.715	1.322	1.250	1.470	1.020	1.086					
28	\$75.80	\$89.20	1.000	1.659	1.905	2.610	2.916	3.030	3.072	3.170	1.580	1.645	1.667	1.715	1.322	1.250	1.470	1.020	1.086					
29	\$75.80	\$89.20	1.000	1.659	1.905	2.610	2.916	3.030	3.072	3.170	1.580	1.645	1.667	1.715	1.322	1.250	1.470	1.020	1.086					
30	\$75.80	\$89.20	1.000	1.659	1.905	2.610	2.916	3.030	3.072	3.170	1.580	1.645	1.667	1.715	1.322	1.250	1.470	1.020	1.086					
31	\$75.80	\$89.20	1.000	1.659	1.905	2.610	2.916	3.030	3.072	3.170	1.580	1.645	1.667	1.715	1.322	1.250	1.470	1.020	1.086					
32	\$75.80	\$89.20	1.000	1.659	1.905	2.610	2.916	3.030	3.072	3.170	1.580	1.645	1.667	1.715	1.322	1.250	1.470	1.020	1.086					
33	\$75.80	\$89.20	1.000	1.659	1.905	2.610	2.916	3.030	3.072	3.170	1.580	1.645	1.667	1.715	1.322	1.250	1.470	1.020	1.086					
34	\$75.80	\$89.20	1.000	1.659	1.905	2.610	2.916	3.030	3.072	3.170	1.580	1.645	1.667	1.715	1.322	1.250	1.470	1.020	1.086					
35	\$75.80	\$89.20	1.000	1.659	1.905	2.610	2.916	3.030	3.072	3.170	1.580	1.645	1.667	1.715	1.322	1.250	1.470	1.020	1.086					
36	\$75.80	\$89.20	1.000	1.659	1.905	2.610	2.916	3.030	3.072	3.170	1.580	1.645	1.667	1.715	1.322	1.250	1.470	1.020	1.086					
37	\$75.80	\$89.20	1.000	1.659	1.905	2.610	2.916	3.030	3.072	3.170	1.580	1.645	1.667	1.715	1.322	1.250	1.470	1.020	1.086					
38	\$75.80	\$89.20	1.000	1.659	1.905	2.610	2.916	3.030	3.072	3.170	1.580	1.645	1.667	1.715	1.322	1.250	1.470	1.020	1.086					
39	\$75.80	\$89.20	1.000	1.659	1.905	2.610	2.916	3.030	3.072	3.170	1.580	1.645	1.667	1.715	1.322	1.250	1.470	1.020	1.086					
40	\$75.80	\$89.20	1.000	1.659	1.905	2.610	2.916	3.030	3.072	3.170	1.580	1.645	1.667	1.715	1.322	1.250	1.470	1.020	1.086					
41	\$76.30	\$89.80	1.000	1.666	1.901	2.604	2.897	3.008	3.045	3.143	1.595	1.660	1.680	1.730	1.316	1.240	1.490	1.020	1.088					
42	\$76.80	\$90.40	1.000	1.673	1.898	2.598	2.878	2.987	3.019	3.116	1.610	1.675	1.693	1.745	1.310	1.255	1.510	1.020	1.090					
43	\$77.40	\$91.00	1.000	1.680	1.889	2.593	2.859	2.966	2.997	3.090	1.650	1.715	1.731	1.784	1.302	1.272	1.543	1.020	1.094					
44	\$77.90	\$91.70	1.000	1.687	1.877	2.587	2.840	2.945	2.975	3.063	1.690	1.755	1.770	1.823	1.294	1.289	1.576	1.020	1.098					
45	\$78.50	\$92.30	1.000	1.695	1.868	2.581	2.821	2.924	2.953	3.037	1.730	1.795	1.809	1.862	1.286	1.306	1.609	1.020	1.102					
46	\$79.10	\$93.00	1.000	1.702	1.857	2.576	2.803	2.903	2.931	3.011	1.770	1.835	1.850	1.901	1.278	1.323	1.642	1.020	1.106					
47	\$79.60	\$93.60	1.000	1.709	1.848	2.570	2.785	2.883	2.909	2.985	1.810	1.875	1.891	1.940	1.270	1.340	1.675	1.020	1.110					
48	\$80.20	\$94.30	1.000	1.716	1.848	2.564	2.766	2.863	2.881	2.960	1.886	1.952	1.962	2.017	1.260	1.360	1.729	1.020	1.116					
49	\$80.70	\$94.90	1.000	1.724	1.850	2.558	2.748	2.842	2.854	2.934	1.962	2.029	2.036	2.094	1.250	1.380	1.783	1.020	1.122					
50	\$81.30	\$95.60	1.000	1.731	1.850	2.553	2.730	2.822	2.827	2.909	2.038	2.106	2.113	2.171	1.240	1.400	1.837	1.020	1.128					
51	\$82.80	\$97.40	1.000	1.744	1.829	2.528	2.700	2.789	2.800	2.871	2.114	2.183	2.192	2.248	1.230	1.420	1.891	1.020	1.134					
52	\$84.30	\$99.20	1.000	1.758	1.809	2.504	2.671	2.755	2.774	2.833	2.190	2.260	2.275	2.325	1.220	1.440	1.945	1.020	1.140					
53	\$85.90	\$101.10	1.000	1.772	1.833	2.480	2.642	2.722	2.725	2.795	2.321	2.392	2.387	2.458	1.212	1.468	2.034	1.020	1.145					
54	\$87.50	\$102.90	1.000	1.785	1.859	2.457	2.614	2.690	2.676	2.759	2.453	2.525	2.505	2.590	1.204	1.496	2.123	1.020	1.150					
55	\$89.20	\$104.90	1.000	1.799	1.883	2.433	2.585	2.658	2.629	2.722	2.585	2.658	2.629	2.722	1.196	1.524	2.212	1.020	1.155					
56	\$95.00	\$111.80	1.000	1.793	1.824	2.390	2.521	2.590	2.582	2.651	N/A	N/A	N/A	N/A	1.188	1.552	2.301	1.020	1.160					
57	\$101.40	\$119.30	1.000	1.787	1.765	2.348	2.458	2.524	2.536	2.582	N/A	N/A	N/A	N/A	1.180	1.580	2.390	1.020	1.165					
58	\$108.10	\$127.20	1.000	1.782	1.748	2.306	2.397	2.459	2.468	2.515	N/A	N/A	N/A	N/A	1.172	1.617	2.551	1.020	1.171					
59	\$115.30	\$135.60	1.000	1.776	1.732	2.265	2.338	2.396	2.401	2.450	N/A	N/A	N/A	N/A	1.164	1.654	2.712	1.020	1.177					
60	\$122.90	\$144.60	1.000	1.770	1.715	2.225	2.280	2.335	2.337	2.386	N/A	N/A	N/A	N/A	1.156	1.691	2.873	1.021	1.183					
61	\$132.60	\$156.00	1.000	1.746	1.679	2.176	2.217	2.269	2.274	2.317	N/A	N/A	N/A	N/A	1.148	1.728	3.034	1.023	1.189					
62	\$143.10	\$168.30	1.000	1.722	1.643	2.128	2.155	2.206	2.213	2.25														

**Massachusetts Mutual Life Insurance Company**

**511 Series**

**Current Premium Rates**

Issue Age	Annual Base Rates		Premium Factors											
	per \$10 of Daily Facility Only	Benefit Amount Comprehensive	Inflation Protection			Limited Pay		Nonforfeiture	Return of Premium		Cov Part Prem Waiv	Paid-Up Survivor		
			None	3% Compound	5% Compound	10 Yr	To 65	Shortened BP	Less Claims	Full				
18	\$59.36	\$69.84	1.000	2.333	6.256	3.269	1.811	1.100	1.250	1.470	1.010	1.065		
19	\$59.36	\$69.84	1.000	2.333	6.195	3.269	1.811	1.100	1.250	1.470	1.010	1.065		
20	\$59.36	\$69.84	1.000	2.333	6.135	3.269	1.811	1.100	1.250	1.470	1.010	1.065		
21	\$59.36	\$69.84	1.000	2.333	6.075	3.269	1.811	1.100	1.250	1.470	1.010	1.065		
22	\$59.36	\$69.84	1.000	2.333	6.016	3.269	1.811	1.100	1.250	1.470	1.010	1.065		
23	\$59.36	\$69.84	1.000	2.333	5.957	3.269	1.811	1.100	1.250	1.470	1.010	1.065		
24	\$59.36	\$69.84	1.000	2.333	5.899	3.269	1.811	1.100	1.250	1.470	1.010	1.065		
25	\$59.36	\$69.84	1.000	2.333	5.842	3.269	1.811	1.100	1.250	1.470	1.010	1.065		
26	\$59.36	\$69.84	1.000	2.333	5.785	3.269	1.811	1.100	1.250	1.470	1.010	1.065		
27	\$59.36	\$69.84	1.000	2.333	5.728	3.269	1.811	1.100	1.250	1.470	1.010	1.065		
28	\$59.36	\$69.84	1.000	2.333	5.673	3.269	1.811	1.100	1.250	1.470	1.010	1.065		
29	\$59.36	\$69.84	1.000	2.333	5.617	3.269	1.811	1.100	1.250	1.470	1.010	1.065		
30	\$59.36	\$69.84	1.000	2.333	5.563	3.269	1.811	1.100	1.250	1.470	1.010	1.065		
31	\$59.36	\$69.84	1.000	2.333	5.508	3.269	1.811	1.100	1.250	1.470	1.010	1.065		
32	\$59.36	\$69.84	1.000	2.333	5.455	3.269	1.811	1.100	1.250	1.470	1.010	1.065		
33	\$59.36	\$69.84	1.000	2.333	5.401	3.269	1.811	1.100	1.250	1.470	1.010	1.065		
34	\$59.36	\$69.84	1.000	2.333	5.349	3.269	1.811	1.100	1.250	1.470	1.010	1.065		
35	\$59.36	\$69.84	1.000	2.333	5.296	3.269	1.811	1.100	1.250	1.470	1.010	1.065		
36	\$59.36	\$69.84	1.000	2.333	5.245	3.269	1.811	1.100	1.250	1.470	1.010	1.065		
37	\$59.36	\$69.84	1.000	2.333	5.193	3.269	1.811	1.100	1.250	1.470	1.010	1.065		
38	\$59.36	\$69.84	1.000	2.333	5.143	3.269	1.811	1.100	1.250	1.470	1.010	1.065		
39	\$59.36	\$69.84	1.000	2.333	5.092	3.269	1.811	1.100	1.250	1.470	1.010	1.065		
40	\$59.36	\$69.84	1.000	2.333	5.043	3.269	1.811	1.100	1.250	1.470	1.010	1.065		
41	\$61.66	\$72.54	1.000	2.267	4.808	3.269	1.811	1.100	1.240	1.490	1.010	1.068		
42	\$64.05	\$75.35	1.000	2.203	4.583	3.269	1.811	1.100	1.255	1.510	1.010	1.070		
43	\$66.90	\$78.70	1.000	2.156	4.412	3.221	1.856	1.100	1.272	1.543	1.010	1.072		
44	\$69.74	\$82.05	1.000	2.112	4.254	3.173	1.901	1.100	1.289	1.576	1.010	1.074		
45	\$72.58	\$85.39	1.000	2.072	4.110	3.126	1.946	1.100	1.306	1.609	1.010	1.076		
46	\$75.43	\$88.74	1.000	2.035	3.975	3.079	1.990	1.100	1.323	1.642	1.010	1.078		
47	\$78.28	\$92.09	1.000	2.001	3.851	3.033	2.033	1.100	1.340	1.675	1.010	1.080		
48	\$81.12	\$95.44	1.000	1.969	3.736	2.991	2.115	1.100	1.360	1.729	1.010	1.084		
49	\$83.96	\$98.78	1.000	1.940	3.629	2.950	2.196	1.100	1.380	1.783	1.010	1.088		
50	\$86.81	\$102.13	1.000	1.912	3.528	2.909	2.277	1.100	1.400	1.837	1.010	1.092		
51	\$89.65	\$105.47	1.000	1.886	3.434	2.869	2.356	1.100	1.420	1.891	1.010	1.096		
52	\$92.50	\$108.82	1.000	1.862	3.346	2.829	2.435	1.100	1.440	1.945	1.010	1.100		
53	\$96.76	\$113.84	1.000	1.841	3.257	2.779	2.521	1.100	1.468	2.034	1.010	1.104		
54	\$101.04	\$118.87	1.000	1.821	3.176	2.730	2.604	1.100	1.496	2.123	1.010	1.108		
55	\$105.31	\$123.89	1.000	1.803	3.102	2.684	2.684	1.100	1.524	2.212	1.010	1.112		
56	\$109.58	\$128.92	1.000	1.786	3.033	2.639	N/A	1.100	1.552	2.301	1.010	1.116		
57	\$113.85	\$133.94	1.000	1.771	2.969	2.595	N/A	1.100	1.580	2.390	1.010	1.120		
58	\$123.81	\$145.66	1.000	1.717	2.822	2.527	N/A	1.100	1.617	2.551	1.010	1.124		
59	\$133.77	\$157.38	1.000	1.672	2.697	2.463	N/A	1.100	1.654	2.712	1.010	1.128		
60	\$143.74	\$169.11	1.000	1.632	2.589	2.403	N/A	1.100	1.691	2.873	1.010	1.132		
61	\$153.71	\$180.83	1.000	1.598	2.495	2.346	N/A	1.100	1.728	3.034	1.010	1.136		
62	\$163.67	\$192.55	1.000	1.568	2.413	2.293	N/A	1.100	1.765	3.195	1.010	1.140		
63	\$180.03	\$211.80	1.000	1.531	2.320	2.205	N/A	1.100	1.817	3.569	1.012	1.142		
64	\$196.39	\$231.05	1.000	1.501	2.243	2.126	N/A	1.100	1.869	3.943	1.014	1.144		
65	\$212.76	\$250.31	1.000	1.475	2.177	2.054	N/A	1.100	1.921	4.317	1.016	1.146		
66	\$229.13	\$269.56	1.000	1.452	2.121	1.990	N/A	1.100	1.973	N/A	1.018	1.148		
67	\$245.49	\$288.81	1.000	1.433	2.072	1.931	N/A	1.100	2.025	N/A	1.020	1.150		
68	\$279.64	\$328.99	1.000	1.394	1.974	1.852	N/A	1.100	2.101	N/A	1.022	1.150		
69	\$313.80	\$369.18	1.000	1.364	1.898	1.784	N/A	1.100	2.177	N/A	1.024	1.150		
70	\$347.96	\$409.36	1.000	1.340	1.837	1.725	N/A	1.100	2.253	N/A	1.026	1.150		
71	\$382.12	\$449.55	1.000	1.320	1.786	1.674	N/A	1.100	2.329	N/A	1.028	1.150		
72	\$416.27	\$489.73	1.000	1.303	1.744	1.629	N/A	1.100	2.405	N/A	1.030	1.150		
73	\$474.61	\$558.37	1.000	1.283	1.702	1.581	N/A	1.100	2.521	N/A	1.036	1.150		
74	\$532.97	\$627.02	1.000	1.268	1.669	1.542	N/A	1.100	2.637	N/A	1.042	1.150		
75	\$591.31	\$695.66	1.000	1.256	1.643	1.509	N/A	1.100	2.753	N/A	1.048	1.150		
76	\$649.66	\$764.31	1.000	1.245	1.621	1.482	N/A	1.100	2.869	N/A	1.054	1.150		
77	\$708.01	\$832.95	1.000	1.237	1.603	1.458	N/A	1.100	2.985	N/A	1.060	1.150		
78	\$801.23	\$942.62	1.000	1.227	1.584	1.414	N/A	1.100	3.170	N/A	1.066	1.150		
79	\$894.45	\$1,052.29	1.000	1.219	1.569	1.378	N/A	1.100	3.355	N/A	1.072	1.150		
80	\$987.67	\$1,161.96	1.000	1.212	1.557	1.348	N/A	1.100	3.541	N/A	1.078	1.150		
81	\$1,080.89	\$1,271.63	1.000	1.207	1.547	1.323	N/A	1.100	3.726	N/A	1.084	1.150		
82	\$1,174.11	\$1,381.30	1.000	1.202	1.539	1.302	N/A	1.100	3.911	N/A	1.090	1.150		
83	\$1,267.32	\$1,490.97	1.000	1.198	1.532	1.284	N/A	1.100	4.361	N/A	1.096	1.150		
84	\$1,360.54	\$1,600.64	1.000	1.195	1.526	1.268	N/A	1.100	4.811	N/A	1.102	1.150		

Discounts	Factor
Single	1.000
Partner	0.850
Covered Partner	0.700
Multi-Product	0.950
Multi-Life	0.900

Individual Underwriting Classes	Factor
Ultra Preferred	0.900
Select Preferred	1.000
Preferred	1.250
Standard Plus	2.500
Standard	5.000

Benefit Type	Factor
Daily Reimbursement	1.000
Monthly Home and Community Based Services (HCBS) Rider	1.045

		Elimination Period Riders	
Elimination Period	Factor	Enhanced EP	HCBS EP Waiver
0 Day	N/A	N/A	N/A
30 Day	1.200	1.030	1.070
60 Day	1.100	1.045	1.110
90 Day	1.000	1.060	1.160
180 Day	0.900	1.075	1.250

		Rider	
Benefit Period	Premium Factor	Restoration of Benefits	Shared Care
1 Year	N/A	N/A	N/A
1.5 Year	N/A	N/A	N/A
2 Year	0.447	1.040	1.300
3 Year	0.524	1.040	1.260
4 Year	0.588	1.040	1.260
5 Year	0.635	1.040	1.280
6 Year	0.670	1.040	1.300
10 Year	0.857	1.040	1.090
Lifetime	1.000	N/A	N/A

Payment Mode	Factor
Annual	1.000
Semi-Annual	0.520
Quarterly	0.265
Monthly - Pre-Authorized Check	0.088

Company  
Number

~~73~~ 14

Form  
Number

MM-200-P

State

VA

Document  
Type

ACTUARIAL MATERIALS

**Massachusetts Mutual Life Insurance Company**  
 Home Office: Springfield, Massachusetts  
 Administrative Office: Post Office Box 4243  
 Woodland Hills, California 91365-4243

**ACTUARIAL MEMORANDUM**

<b>LONG TERM CARE INSURANCE POLICY:</b>	<b>FORM MM-200-P-VA</b>
<b>FULL NONFORFEITURE RIDER:</b>	<b>FORM MM-200-R1</b>
<b>SHORTENED BENEFIT PERIOD NONFORFEITURE RIDER:</b>	<b>FORM MM-200-R2</b>
<b>COMPOUND INFLATION PROTECTION RIDER:</b>	<b>FORM MM-200-R3</b>
<b>SIMPLE INFLATION PROTECTION RIDER:</b>	<b>FORM MM-200-R4</b>
<b>INDEMNITY BENEFIT RIDER:</b>	<b>FORM MM-200-R5</b>
<b>CAREGIVER INDEMNITY BENEFIT RIDER</b>	<b>FORM MM-200-R6</b>
<b>HOME &amp; COMMUNITY BASED SERVICES ENHANCEMENT RIDER:</b>	<b>FORM MM-200-R7</b>

**I. GENERAL INFORMATION**

This Actuarial Memorandum demonstrates that the above-referenced policy and rider forms comply with and exceed the minimum applicable loss ratio for this state. The overall aggregate loss ratios for the entire projection period are anticipated to be:

Long Term Care Insurance Policy (composite): 65%

**II. SALES DESCRIPTION**

Sales are conducted by individual agents who primarily sell on an individual contact basis. The typical policyholder is a senior citizen without any adequate coverage for long term care services.

**III. UNDERWRITING METHODOLOGY**

Strict underwriting criteria are administered with frequent utilization of medical records and paramedical functional assessments, personal history interviews and MIB searches.

**IV. PROJECTION PERIOD**

The projection period for these forms is 30 years. It is anticipated that premiums will remain adequate without the need for any rate increases throughout the entire period for which the Company maintains a contractual commitment. The present values obtained beyond the 30 year period are negligible and are therefore ignored.

**V. BENEFIT AMOUNT**

The policies and riders are available as lifetime coverage with an unlimited Benefit Amount or for 3 years (1,095 days) or 6 years (2,190 days). The Benefit Amount payable under the policy for Facility Services (Nursing Facility/Assisted Living Facility) and Home and Community Based Services (if covered) is determined by multiplying the daily benefit amount selected by the number of days in the benefit period selected. This Benefit Amount (if other than unlimited) may be restored if the insured is not eligible to receive benefits (i.e. must have recovered) for at least 180 consecutive days.

**VI. RENEWABILITY - This Policy is guaranteed Renewable for life.**

**VII. ELIMINATION PERIOD**

The policies and riders are available with an elimination period of 0, 30 or 90 days. The elimination period is a cumulative lifetime deductible. After satisfaction of the elimination period, no further elimination period will be required for any subsequent claims.

## **VIII. BASE POLICY BENEFITS PER (\$10.00) UNIT OF COVERAGE**

- A. Facility Services Benefit (FS) - Actual expenses incurred up to \$10.00 per day for Facility Services (Qualified Long Term Care Services, including skilled, intermediate and custodial care) while confined in a qualified Nursing Facility or Assisted Living Facility and Maintenance or Personal Care performed in an Assisted Living Facility. Benefits paid are deducted from the Benefit Amount.**
- B. Home and Community Based Services (HCBS) - This optional benefit must be selected by the insured to be covered under the policy. Actual expenses incurred up to \$10.00 per day. Coverage is provided for Home Health Care (services performed through a home health care agency including care by professional nurse, therapist or home health aide, homemaker services) Adult Day Care, Hospice Care and Caregiver Training. The Caregiver Training benefit payable is a maximum lifetime benefit equal to three times the daily benefit selected. Benefits paid are deducted from the Benefit Amount.**
- C. Facility Bed Reservation Benefit - Actual Facility Services expenses incurred up to \$10.00 per day to reserve a bed in a Nursing Facility or Assisted Living Facility during hospitalization. Benefit is payable up to 30 days per calendar year. Benefits paid are deducted from the Benefit Amount.**
- D. Respite Care - Actual expenses incurred up to \$10.00 per day for Facility Services or Home and Community Based Services (if covered) payable as short term care to relieve primary caregiver. Benefit is payable up to 30 days per calendar year. Benefits paid are deducted from the Benefit Amount.**
- E. Alternative Plan of Care Benefit - Provides Qualified Long Term Care Services agreed upon by the insured, Licensed Health Care Practitioner and the Company, which may include equipment purchases or rentals; permanent or temporary modifications to the insured's residence (such as ramps or rails) or care services not normally covered under the Home and Community Based Services. The Alternative Plan of Care is not available for providing Home and Community Based Services on policies providing Facility Services Benefits only.**
- F. Personal Care Advisor, accessible through toll-free telephone number, is available to insured to provide assistance with any questions about their coverage.**
- G. Waiver of Premium is provided after confinement in a Nursing Facility or an Assisted Living Facility for a period of 90 days. Premiums already paid, but not earned will be refunded on a pro-rata basis.**

## **IX. OPTIONAL BENEFIT RIDERS**

- A. Full Nonforfeiture Rider (Full Nonf.) - This rider provides a nonforfeiture benefit without a claims offset in the event of policy lapse. If the policy lapses due to nonpayment of premiums, coverage will continue and benefits will be payable at the daily benefits in effect on the date of lapse. No further benefit increases will occur under any Inflation Protection Rider, if attached to the policy. The Benefit Amount becomes equal to the total of premiums paid for the policy and all riders. Any benefits paid after lapse will be deducted from this new Benefit Amount. Any of the new Benefit Amount that is not paid as benefits after lapse will be paid to the beneficiary upon the insured's death (second-to-die in the case of joint coverage). If the policy lapses due to death of the insured (second-to-die in the case of joint coverage) and has not previously lapsed for nonpayment of premium, the total of premiums paid, with no deduction for benefits paid, will be paid to the beneficiary.**

- B. **Shortened Benefit Period Nonforfeiture Rider (SBP)** - This rider provides the nonforfeiture credit as adopted by the NAIC. If the policy has been in force for at least three years and lapses due to nonpayment of premiums, coverage will continue and benefits will be payable based on the daily benefits in effect on the date of lapse. No further benefit increases will occur under any Inflation Protection Rider, if attached to the policy. The Benefit Amount becomes equal to the greater of: (a) the total of premiums paid for the policy and riders; or (b) thirty (30) times the daily benefit in effect on the date of lapse. Any benefits paid after lapse will be deducted from this new Benefit Amount.
- C. **Compound Inflation Protection Rider (CIP)** - This rider increases the daily benefits and the remaining Benefit Amount by 5%, compounded annually. Increases are made regardless of claims status.
- D. **Simple Inflation Protection Rider (SIP)** - This rider increases the daily benefits and the Benefit Amount annually by 5% of the dollar amounts originally issued. The remaining Benefit Amount will be increased by the same proportion as the increase in daily benefits. Increases are made regardless of claims status.
- E. **Indemnity Benefit Rider (IB)** - This rider provides that all benefits covered under the policy will be payable on an indemnity basis at the full daily benefit selected, regardless of actual expenses incurred. This rider is not available if either the CIB or HCBSE Rider is purchased.
- F. **Caregiver Indemnity Benefit Rider (CIB)** - This rider provides that all benefits covered under the policy will be payable on an indemnity basis at the full daily benefit selected, regardless of actual expenses incurred. In addition, benefits for Home and Community Based Services will be payable regardless of the service provider, which may include any non-professional, family members or friends of the insured. This rider is available only to insureds in the Ultra Preferred risk class and is not available if either the IB, HCBSE rider, or the 10 or 20 Pay Option is selected.
- G. **Home & Community Based Services Enhancement Rider (HCBSE)** - This rider provides that all benefits covered under the policy will be payable on a weekly basis rather than a daily basis (Sunday through Saturday) up to seven (7) times the daily benefit. In addition premiums for the policy and riders will be waived following the 90th HCBS visit. Premiums already paid, but not earned will be refunded on a pro-rata basis. This rider is not available if either the IB or CIB Rider is purchased.

#### **X. CLAIM COST DEVELOPMENT**

- A. Claim costs for skilled, intermediate and custodial Facility Services Benefits are derived from The Reports of the Society of Actuaries based on the 1985 National Nursing Home Survey Utilization Data in Transactions, Society of Actuaries, 1988-89-90 Reports; and the Long Term Care Intercompany Study: 1984-1991 Experience in Transactions, Society of Actuaries, 1993-94 Reports.
- B. Claim costs for Home and Community Based Services are decreasing percentages of Facility Services claim costs derived from information provided by a reinsurer.
- C. Claim costs for the Shortened Benefit Period Nonforfeiture Rider and the Full Nonforfeiture Rider are developed by using mortality rates and nonforfeiture benefits appropriate at each duration.
- D. For the Inflation Protection Riders, the foregoing claim costs are increased by 5% each duration (simple interest rider) or compounded by 5% each duration (compound interest rider) to obtain the actual claim costs by duration.
- E. Caregiver Indemnity Benefit Rider expected claim costs are 200% of the base policy.
- F. Claim costs for the Home & Community Based Services Enhancement Rider are 25% of the individual claim costs.

G. Claim costs were adjusted to accommodate the Waiver of Premium, which is treated as an increment of the daily benefit.

H. Claim costs for joint coverage are 150% of the individual claim costs

#### **XI. ACTUARIAL ASSUMPTIONS**

A. Ultimate annual claim costs: See Attachments A1.1 (FS), A1.2 (w/HCBS)

B. Morbidity: based on the aggregate claim cost development described in the previous section. The select and ultimate durational factors are:

Duration 1	0.1
Duration 2	0.2
Duration 3	0.4
Duration 4	0.6
Duration 5	0.8
Durations 6+	1.0

C. Persistency: varies by duration.

The persistency shown below is further reduced by mortality.

	<u>Lifetime</u>
Duration 1	92.0%
Duration 2	94.0%
Duration 3	95.0%
Duration 4	96.0%
Duration 5 +	96.5%

For Limited Pay - 98% persistency is assumed during the premium payment period

D. Mortality: 1983 GAM for policy reserves.  
1975-80 Select and Ultimate for developing Facility Services premiums and nonforfeiture benefits.

E. Interest: Premiums and claims are discounted at an annual rate of 6.5%.  
Policy reserves are calculated at the maximum valuation interest rate of 4.5%.

F. Commissions: See Attachment B

G. Expenses: Per Policy - 1st year: \$200; Renewal: \$40  
Percentage of Premiums - All years: 7.5%

H. Statutory Reserves: Computed on a 1-year full preliminary term basis using 1983 GAM and maximum statutory interest rate.

I. Profit Margins: 5.0%

J. Underwriting Class Distribution: Ultra Preferred: Preferred: Standard: = 6 : 3 : .1.



**K. Issue Age & Sex Distribution:** Premiums are assumed to be distributed by age brackets as follows:

<b>Age Groups</b>	<b>Distr %</b>	<b>Male %</b>	<b>Female %</b>
40 to 44	1%	30%	70%
45 to 49	1%	30%	70%
50 to 54	3%	30%	70%
55 to 59	10%	30%	70%
60 to 64	30%	30%	70%
65 to 69	30%	30%	70%
70 to 74	20%	30%	70%
75 to 79	4%	30%	70%
80 to 84	1%	30%	70%

**L. Average Unit Size:** Anticipated to be 9 units. Policies are available from 2 to 30 units.

**M. Average Issue Age:** 65

**N. Average Annual Premium:** based on the anticipated average unit size is: \$ 2,379  
With 40% Facility Services Only: (90 units FS composite)  
With 60% HCBS Benefit: (90 units FS with HCBS)

**O. Policy/Rider Fee:** None.

**XII. GROSS PREMIUMS AND PREMIUM FACTORS:** See Attachments C1 (FS), C2 (FS w/HCBS)

The policies are issued to ages 40-84 on an age nearest birthday basis.

Gross Annual Premiums (per \$10 Daily Benefit) for a preferred risk/lifetime coverage/90 day elimination period are shown in the attachments.

The rates are subject to the following adjustments and factors for plan variations and optional coverages:

**A. Elimination Period Factors:**

0-Day	1.30
30-Day	1.15
90-Day	1.00

**B. Benefit Amount Factors:**

Lifetime	1.00
6 Year	0.90
3 Year	0.65

**C. Risk Classes:** Preferred Risk premiums are shown in the table. The following factors are then applied to the Preferred Risk premiums to obtain premiums for Ultra Preferred and Standard Risks:

Ultra Preferred :	0.875
Preferred:	1.000
Standard:	1.250

**D. Joint Coverage:** Premiums for various joint rate combinations are calculated as 150% of the base policy premium of the older insured, times the following factors:

2 Ultra Preferred:	0.875
1 Ultra Preferred/1 Preferred:	0.9375
1 Ultra Preferred/1 Standard	1.0625
2 Preferred:	1.000
1 Preferred/1 Standard:	1.125
2 Standard:	1.250

**E. Full Nonforfeiture Rider:** Premiums for this optional rider are calculated as a percentage of the base policy premium which varies by issue age. Premium factors are shown in the attachments.

**F. Shortened Benefit Period Nonforfeiture Rider:** Premiums for this optional rider are calculated as a percentage of the base policy premium which varies by issue age. Premium factors are shown in the attachments.

**G. Compound Inflation Protection and Simple Inflation Protection Riders:** Premiums for these optional riders are calculated as a percentage of the gross premiums required for the coverage applied for (without the rider) which varies by issue age. Premium factors are shown in the attachments. These premium factors vary for lifetime pay plans versus limited pay plans.

**H. Indemnity Benefit Rider:** Premiums for this optional rider are an additional 20% of the total premium without this rider. Factor: 1.20

**I. Caregiver Indemnity Benefit Rider** Premiums for this optional rider are an additional 100% of the total premium without this rider. Factor: 2.00

**J. HCBS Enhancement Rider:** Premiums for this optional rider are an additional 20% of the total premium without this rider. Factor: 1.20

**K. 10 Year Premium Payment Option (10-Pay):** This option provides for a paid-up policy after premiums have been paid for 10 years. Premiums for this option are calculated as a percentage of the base policy premium which varies by issue age.

**L. 20 Year Premium Payment Option (20-Pay):** This option provides for a paid-up policy after premiums have been paid for 20 years. Premiums for this option are calculated as a percentage of the base policy premium which varies by issue age.

**M. Non-level Premium Payment Option :**

This option provides for a discount of 25% on renewal premiums with payment of 150% additional on the first year premium. Premium Factors: 1st Year - 2.50: Renewal - .75

**N. Discounts:**

Rates will be discounted (with a corresponding reduction in compensation rates) when the Company negotiates with an association or employer group (which may include family members) who endorses the product to its employees or members. This discount will be 15% for ages 40-64 and 10% for ages 65-84. In addition, a discount will be available for the employees and agents of Massachusetts Mutual Life Insurance Company and its affiliates, fee-for-service sales and possible future direct marketing opportunities. This discount will be 20% for ages 40-64 and 15% for ages 65-84.

**O. Modal Premium Factors:**

0.085 PAC/EFT  
0.27 quarterly  
0.52 semi-annual

**XIII. LOSS RATIO COMPLIANCE: See Attachment D1:**

Composite: A 30 year projection is performed on a policy with 40% Facility Services only and 60% Facility Services with Home & Community Based Services(Daily Benefit of \$100) with the following riders/endorsements.

Full Nonforfeiture Rider	15.0%
Shortened Benefit Period Nonforfeiture Rider	1.0%
Compound Inflation Protection Rider	35.0%
Simple Inflation Protection Rider	20.0%
Ten Year Premium Payment Option	4.0%
Twenty Year Premium Payment Option	.5%
Indemnity Benefit Rider	50.0%
Caregiver Indemnity Benefit Rider	.5%
HCBS Enhancement Rider	2.0%

The anticipated Incurred Claims, Earned Premiums & Loss Ratios are illustrated in Attachment D1. The overall cumulative loss ratios are expected to be 65%.

**Mass Mutual Life Insurance Company**  
**Ultimate Claim Costs**  
**Facility Services only / \$100 daily benefit**

----- Individual ----->

Attained Age	Claim Costs	Attained Age	Claim Costs
40	19.19	70	392.24
41	19.10	71	458.71
42	20.92	72	536.46
43	22.91	73	627.37
44	25.09	74	733.70
45	27.47	75	858.05
46	30.09	76	1,003.47
47	32.95	77	1,173.53
48	36.09	78	1,372.42
49	39.52	79	1,605.02
50	43.28	80	1,877.03
51	47.40	81	2,045.05
52	51.90	82	2,228.11
53	56.84	83	2,427.56
54	62.25	84	2,644.86
55	68.17	85	2,881.61
56	74.66	86	3,139.55
57	81.76	87	3,420.58
58	89.54	88	3,726.77
59	98.06	89	4,060.37
60	107.39	90	4,423.82
61	123.41	91	4,617.58
62	141.82	92	4,819.81
63	162.98	93	5,030.91
64	187.30	94	5,251.25
65	215.25	95	5,481.25
66	247.37	96	5,721.31
67	284.28	97	5,971.89
68	326.70	98	6,233.45
69	375.44	99	6,506.46

----- Joint ----->

Attained Age	Claim Costs	Attained Age	Claim Costs
40	28.78	70	588.36
41	28.65	71	688.07
42	31.38	72	804.68
43	34.36	73	941.06
44	37.63	74	1,100.55
45	41.21	75	1,287.07
46	45.13	76	1,505.20
47	49.43	77	1,760.30
48	54.13	78	2,058.63
49	59.28	79	2,407.52
50	64.92	80	2,815.55
51	71.09	81	3,067.58
52	77.86	82	3,342.17
53	85.26	83	3,641.34
54	93.38	84	3,967.28
55	102.26	85	4,322.41
56	111.99	86	4,709.32
57	122.64	87	5,130.87
58	134.31	88	5,590.15
59	147.09	89	6,090.55
60	161.08	90	6,635.73
61	185.11	91	6,926.36
62	212.73	92	7,229.72
63	244.48	93	7,546.37
64	280.95	94	7,876.88
65	322.88	95	8,221.87
66	371.05	96	8,581.97
67	426.42	97	8,957.84
68	490.04	98	9,350.17
69	563.16	99	9,759.68

Mass Mutual Life Insurance Company  
 Ultimate Claim Costs  
 Facility Services with HCBS (\$100 daily benefit)

----- Individual ----->

Attained Age	Claim Costs	Attained Age	Claim Costs
40	46.02	70	611.89
41	50.39	71	697.25
42	55.19	72	804.68
43	60.44	73	922.24
44	66.19	74	1,056.53
45	72.49	75	1,209.85
46	79.38	76	1,384.78
47	86.93	77	1,596.00
48	95.20	78	1,839.04
49	104.26	79	2,134.67
50	114.18	80	2,458.91
51	125.04	81	2,638.12
52	136.94	82	2,851.98
53	149.97	83	3,058.72
54	164.23	84	3,306.07
55	179.86	85	3,573.19
56	196.97	86	3,861.65
57	205.94	87	4,173.11
58	213.94	88	4,509.39
59	223.56	89	4,872.44
60	245.69	90	5,264.35
61	273.33	91	5,494.92
62	302.26	92	5,687.38
63	330.33	93	5,886.17
64	363.97	94	6,143.97
65	402.54	95	6,413.06
66	447.09	96	6,636.72
67	495.98	97	6,927.39
68	549.51	98	7,230.80
69	611.89	99	7,547.49

----- Joint ----->

Attained Age	Claim Costs	Attained Age	Claim Costs
40	69.03	70	917.84
41	75.59	71	1,045.87
42	82.78	72	1,207.03
43	90.66	73	1,383.36
44	99.28	74	1,584.79
45	108.73	75	1,814.77
46	119.07	76	2,077.18
47	130.40	77	2,394.01
48	142.81	78	2,758.57
49	156.39	79	3,202.01
50	171.27	80	3,688.37
51	187.56	81	3,957.17
52	205.41	82	4,277.97
53	224.95	83	4,588.08
54	246.35	84	4,959.11
55	269.79	85	5,359.79
56	295.45	86	5,792.47
57	308.91	87	6,259.66
58	320.91	88	6,764.09
59	335.34	89	7,308.66
60	368.54	90	7,896.52
61	410.00	91	8,242.37
62	453.39	92	8,531.07
63	495.50	93	8,829.25
64	545.95	94	9,215.95
65	603.80	95	9,619.59
66	670.64	96	9,955.08
67	743.97	97	10,391.09
68	824.27	98	10,846.20
69	917.84	99	11,321.23

# ATTACHMENT B

## Mass Mutual Life Insurance Company Commissions

### Agent or Broker Level

<u>Base, HCBS</u>					<u>Optional Riders, Ten Pay and Twenty Pay</u>		
<u>Age</u>	<u>First year</u>	<u>Renewal Years 2-5</u>	<u>6-10</u>	<u>11+</u>	<u>Age</u>	<u>First year</u>	<u>Renewal Years 2+</u>
40-54	65%	10%	5%	2%	40-54	65%	0%
55-69	55%	10%	5%	2%	55-69	55%	0%
70-84	45%	10%	5%	2%	70-84	45%	0%

Up to 10% Agent Bonus – First Year Only

Excess premium on 1<sup>st</sup> year Non-Level is not commissionable

12-16-1999

## ATTACHMENT C1

**Mass Mutual Life Insurance Company**  
**Gross Premiums for Facility Services**  
**Preferred / Lifetime / 90 day EP**

Issue Age	\$10 FS	Full Nonf Factor	SBP Factor	CIP Factor	SIP Factor	LTD Pay CIP Factor	LTD Pay SIP Factor	10-Pay Factor	20-Pay Factor
40	\$32.00	1.472	1.243	3.650	2.500	4.250	3.000	2.500	1.620
41	\$32.80	1.486	1.249	3.580	2.420	4.150	2.910	2.480	1.610
42	\$33.60	1.500	1.254	3.510	2.340	4.050	2.820	2.460	1.600
43	\$34.40	1.515	1.260	3.440	2.260	3.950	2.730	2.440	1.590
44	\$35.20	1.529	1.265	3.370	2.180	3.850	2.640	2.420	1.580
45	\$36.00	1.543	1.271	3.300	2.100	3.750	2.550	2.400	1.570
46	\$36.80	1.558	1.276	3.230	2.040	3.670	2.460	2.380	1.560
47	\$37.60	1.572	1.282	3.160	1.980	3.590	2.370	2.360	1.550
48	\$38.40	1.586	1.287	3.100	1.940	3.510	2.280	2.340	1.540
49	\$40.00	1.601	1.293	3.040	1.900	3.430	2.190	2.320	1.530
50	\$41.60	1.615	1.298	3.000	1.860	3.400	2.100	2.300	1.520
51	\$43.20	1.629	1.304	2.940	1.820	3.330	2.080	2.280	1.510
52	\$44.80	1.643	1.309	2.880	1.780	3.260	2.060	2.260	1.500
53	\$47.20	1.658	1.315	2.820	1.750	3.190	2.040	2.240	1.490
54	\$49.60	1.672	1.320	2.760	1.720	3.120	2.020	2.220	1.480
55	\$52.00	1.686	1.326	2.700	1.690	3.050	2.000	2.200	1.470
56	\$54.40	1.701	1.331	2.630	1.660	2.970	1.980	2.180	1.460
57	\$56.80	1.715	1.337	2.560	1.640	2.890	1.960	2.160	1.450
58	\$59.20	1.729	1.342	2.490	1.620	2.810	1.940	2.140	1.440
59	\$62.40	1.744	1.348	2.420	1.600	2.730	1.920	2.120	1.430
60	\$65.60	1.758	1.353	2.350	1.580	2.650	1.900	2.100	1.420
61	\$76.00	1.772	1.359	2.280	1.560	2.570	1.880	2.080	1.410
62	\$86.40	1.786	1.364	2.210	1.550	2.490	1.860	2.060	1.400
63	\$92.80	1.801	1.370	2.140	1.540	2.410	1.840	2.040	1.390
64	\$99.20	1.815	1.375	2.070	1.530	2.330	1.820	2.020	1.380
65	\$105.60	1.844	1.386	2.000	1.520	2.250	1.800	2.000	1.370
66	\$125.60	1.872	1.397	1.940	1.510	2.200	1.770	1.950	1.360
67	\$145.60	1.901	1.408	1.890	1.500	2.150	1.740	1.900	1.350
68	\$158.40	1.929	1.419	1.840	1.480	2.100	1.710	1.850	1.340
69	\$171.20	1.958	1.430	1.790	1.460	2.050	1.680	1.800	1.330
70	\$184.00	1.987	1.441	1.730	1.450	2.000	1.650	1.750	1.320
71	\$211.20	2.015	1.452	1.690	1.440	1.950	1.630	1.700	1.310
72	\$238.40	2.044	1.463	1.660	1.430	1.900	1.610	1.650	1.300
73	\$265.60	2.072	1.474	1.640	1.420	1.850	1.590	1.600	1.290
74	\$292.80	2.101	1.485	1.620	1.410	1.800	1.570	1.550	1.280
75	\$320.00	2.115	1.491	1.600	1.400	1.800	1.550	1.500	1.270
76	\$371.20	2.130	1.496	1.580	1.390	1.770	1.530	1.480	1.260
77	\$422.40	2.144	1.502	1.560	1.380	1.740	1.510	1.460	1.250
78	\$473.60	2.158	1.507	1.540	1.370	1.710	1.490	1.440	1.240
79	\$524.80	2.173	1.513	1.520	1.360	1.680	1.470	1.420	1.230
80	\$576.00	2.187	1.518	1.500	1.350	1.650	1.450	1.400	1.220
81	\$627.20	2.201	1.524	1.490	1.340	1.630	1.430	1.380	1.210
82	\$678.40	2.215	1.529	1.480	1.330	1.610	1.410	1.360	1.200
83	\$739.20	2.230	1.535	1.470	1.320	1.590	1.390	1.340	1.190
84	\$800.00	2.244	1.540	1.460	1.310	1.570	1.370	1.320	1.180

## ATTACHMENT C2

**Mass Mutual Life Insurance Company**  
**Gross Premiums for Facility Services with Home and Community Based Services**  
**Preferred / Lifetime / 90 day EP**

Issue Age	\$10 FS with HCBS	Full Nonf Factor	SBP Factor	CIP Factor	SIP Factor	LTD Pay CIP Factor	LTD Pay SIP Factor	10-Pay Factor	20-Pay Factor
40	\$40.00	1.472	1.243	3.650	2.500	4.250	3.000	2.500	1.620
41	\$41.00	1.486	1.249	3.580	2.420	4.150	2.910	2.480	1.610
42	\$42.00	1.500	1.254	3.510	2.340	4.050	2.820	2.460	1.600
43	\$43.00	1.515	1.260	3.440	2.260	3.950	2.730	2.440	1.590
44	\$44.00	1.529	1.265	3.370	2.180	3.850	2.640	2.420	1.580
45	\$45.00	1.543	1.271	3.300	2.100	3.750	2.550	2.400	1.570
46	\$46.00	1.558	1.276	3.230	2.040	3.670	2.460	2.380	1.560
47	\$47.00	1.572	1.282	3.160	1.980	3.590	2.370	2.360	1.550
48	\$48.00	1.586	1.287	3.100	1.940	3.510	2.280	2.340	1.540
49	\$50.00	1.601	1.293	3.040	1.900	3.430	2.190	2.320	1.530
50	\$52.00	1.615	1.298	3.000	1.860	3.400	2.100	2.300	1.520
51	\$54.00	1.629	1.304	2.940	1.820	3.330	2.080	2.280	1.510
52	\$56.00	1.643	1.309	2.880	1.780	3.260	2.060	2.260	1.500
53	\$59.00	1.658	1.315	2.820	1.750	3.190	2.040	2.240	1.490
54	\$62.00	1.672	1.320	2.760	1.720	3.120	2.020	2.220	1.480
55	\$65.00	1.686	1.326	2.700	1.690	3.050	2.000	2.200	1.470
56	\$68.00	1.701	1.331	2.630	1.660	2.970	1.980	2.180	1.460
57	\$71.00	1.715	1.337	2.560	1.640	2.890	1.960	2.160	1.450
58	\$74.00	1.729	1.342	2.490	1.620	2.810	1.940	2.140	1.440
59	\$78.00	1.744	1.348	2.420	1.600	2.730	1.920	2.120	1.430
60	\$82.00	1.758	1.353	2.350	1.580	2.650	1.900	2.100	1.420
61	\$95.00	1.772	1.359	2.280	1.560	2.570	1.880	2.080	1.410
62	\$108.00	1.786	1.364	2.210	1.550	2.490	1.860	2.060	1.400
63	\$116.00	1.801	1.370	2.140	1.540	2.410	1.840	2.040	1.390
64	\$124.00	1.815	1.375	2.070	1.530	2.330	1.820	2.020	1.380
65	\$132.00	1.844	1.386	2.000	1.520	2.250	1.800	2.000	1.370
66	\$157.00	1.872	1.397	1.940	1.510	2.200	1.770	1.950	1.360
67	\$182.00	1.901	1.408	1.890	1.500	2.150	1.740	1.900	1.350
68	\$198.00	1.929	1.419	1.840	1.480	2.100	1.710	1.850	1.340
69	\$214.00	1.958	1.430	1.790	1.460	2.050	1.680	1.800	1.330
70	\$230.00	1.987	1.441	1.730	1.450	2.000	1.650	1.750	1.320
71	\$264.00	2.015	1.452	1.690	1.440	1.950	1.630	1.700	1.310
72	\$298.00	2.044	1.463	1.660	1.430	1.900	1.610	1.650	1.300
73	\$332.00	2.072	1.474	1.640	1.420	1.850	1.590	1.600	1.290
74	\$366.00	2.101	1.485	1.620	1.410	1.800	1.570	1.550	1.280
75	\$400.00	2.115	1.491	1.600	1.400	1.800	1.550	1.500	1.270
76	\$464.00	2.130	1.496	1.580	1.390	1.770	1.530	1.480	1.260
77	\$528.00	2.144	1.502	1.560	1.380	1.740	1.510	1.460	1.250
78	\$592.00	2.158	1.507	1.540	1.370	1.710	1.490	1.440	1.240
79	\$656.00	2.173	1.513	1.520	1.360	1.680	1.470	1.420	1.230
80	\$720.00	2.187	1.518	1.500	1.350	1.650	1.450	1.400	1.220
81	\$784.00	2.201	1.524	1.490	1.340	1.630	1.430	1.380	1.210
82	\$848.00	2.215	1.529	1.480	1.330	1.610	1.410	1.360	1.200
83	\$924.00	2.230	1.535	1.470	1.320	1.590	1.390	1.340	1.190
84	\$1,000.00	2.244	1.540	1.460	1.310	1.570	1.370	1.320	1.180




## Attachment D1

**Mass Mutual Life Insurance Company**  
**Composite**

Dur	Incurred Claims	Earned Premiums	Annual Loss	Present Val (Incurred Clms)	Present Val (Earned Prms)	Cumulative Loss Ratio
1	67,386	2,643,968	3%	65,297	2,643,968	2%
2	133,559	2,430,281	5%	186,817	4,925,921	4%
3	266,479	2,274,153	12%	414,478	6,930,950	6%
4	422,597	2,143,971	20%	753,480	8,705,834	9%
5	605,846	2,035,404	30%	1,209,821	10,288,000	12%
6	829,925	1,937,579	43%	1,796,791	11,702,202	15%
7	922,350	1,841,286	50%	2,409,315	12,964,098	19%
8	1,024,158	1,746,139	59%	3,047,939	14,087,750	22%
9	1,133,668	1,652,090	69%	3,711,703	15,085,994	25%
10	1,218,524	1,558,716	78%	4,381,608	15,970,337	27%
11	1,316,084	1,336,620	98%	5,060,988	16,682,389	30%
12	1,412,014	1,247,986	113%	5,745,401	17,306,647	33%
13	1,515,591	1,160,542	131%	6,435,183	17,851,734	36%
14	1,623,000	1,074,203	151%	7,128,766	18,325,475	39%
15	1,685,083	987,651	171%	7,804,930	18,734,462	42%
16	1,800,157	902,085	200%	8,483,183	19,085,216	44%
17	1,794,649	797,122	225%	9,118,091	19,376,242	47%
18	1,787,289	700,199	255%	9,711,805	19,616,279	50%
19	1,771,694	611,266	290%	10,264,417	19,813,039	52%
20	1,713,277	530,219	323%	10,766,194	19,973,294	54%
21	1,622,943	453,975	357%	11,212,503	20,102,131	56%
22	1,547,170	389,129	398%	11,612,008	20,205,825	57%
23	1,471,048	331,112	444%	11,968,673	20,288,673	59%
24	1,390,972	279,646	497%	12,285,340	20,354,373	60%
25	1,295,841	234,394	553%	12,562,344	20,406,081	62%
26	1,163,989	191,992	606%	12,795,977	20,445,850	63%
27	1,064,524	158,983	670%	12,996,605	20,476,771	63%
28	969,641	130,548	743%	13,168,196	20,500,613	64%
29	877,839	106,303	826%	13,314,061	20,518,841	65%
30	795,883	85,841	927%	13,438,237	20,532,663	65%

### **ACTUARIAL CERTIFICATION**

To the best of my knowledge and judgment, the rates for the forms described in this Memorandum and submitted herewith are in compliance with the applicable statutes and rules of the state in which these forms are filed, the reserves are anticipated to be adequate, and the benefits are reasonable in relation to the premiums.

 FSA, MAAA  
Jay R. Peters, FSA, MAAA  
Consulting Actuary

December 20, 1999

**Massachusetts Mutual Life Insurance Company**  
 Home Office: Springfield, MA  
 Long Term Care Administrative Office: Post Office Box 4243  
 Woodland Hills, California 91365-4243

**ACTUARIAL ADDENDUM**

**HOME AND COMMUNITY BASED SERVICES  
 WAIVER OF PREMIUM BENEFIT RIDER:**

**FORM MM-200-R11-VA**

**I. GENERAL INFORMATION**

This Actuarial Addendum supplements the Actuarial Memorandum for the following Form, which has been previously filed and approved.

**LONG TERM CARE POLICY**

**FORM MM-200-P-VA**

In addition to the initial filing of the above rider, base policy rates are being increased for ages 40-69 and Compound and Simple Inflation Protection factors are being decreased for ages 40-71. These changes apply to new policyholders only.

**II. SALES DESCRIPTION**

Sales are conducted by individual agents who primarily sell on an individual contract basis. The typical policyholder is a senior citizen without any adequate coverage for long term care services. This form will also be made available to existing policyholders of the above-mentioned policy form for a limited upgrade period.

**III. UNDERWRITING METHODOLOGY**

Strict underwriting criteria are administered with frequent utilization of medical records and paramedical functional assessments, personal history interviews and MIB searches.

**IV. OPTIONAL BENEFIT RIDERS**

Home & Community Based Services Waiver of Premium Benefit Rider (HC WOP) — This rider waives premiums after 90 Home and Community Based Services visits. It is available for new issues and will be offered to existing policyholders for a limited upgrade period.

**V. ACTUARIAL ASSUMPTIONS**

The assumptions described in the original Actuarial Memorandum for the base policy (noted above) are unchanged except as follows:

**Claim costs:**

Claim costs were adjusted to accommodate the Home and Community Based Services Waiver of Premium Benefit, which is treated as an increment to the Daily Benefit.

**VI. PREMIUM FACTORS: See Attachments A1 and A2**

**Home and Community Based Services Waiver of Premium Benefit Rider:**

Premiums for this optional rider vary for existing policyholders versus new issues. Premium factors are shown in the attachments. Factors for existing policyholders are higher than for new issues because their benefits are being updated retroactively.

**VII. LOSS RATIO COMPLIANCE**

The anticipated loss ratio is equal or in excess of the minimum loss ratio requirement of 60%. The anticipated loss ratio is calculated as the present value of benefits incurred (excluding increase in active life reserves) divided by the present value of annualized earned premiums based on future expected experience of business as documented in the original Actuarial Memorandum.

## Attachment A1

**Massachusetts Mutual Life Insurance Company**  
**Gross Premiums for Facility Services**  
**Preferred / Lifetime / 90 day EP**

Iss Age	\$10 FS	CIP Factor	SIP Factor
40	35.20	2.400	1.750
41	36.00	2.380	1.726
42	36.80	2.360	1.702
43	37.60	2.340	1.678
44	38.40	2.320	1.654
45	39.20	2.300	1.630
46	40.80	2.280	1.612
47	42.40	2.260	1.594
48	44.00	2.240	1.583
49	45.60	2.220	1.571
50	47.20	2.200	1.559
51	48.80	2.180	1.547
52	50.40	2.160	1.535
53	52.00	2.140	1.526
54	53.60	2.120	1.517
55	55.20	2.100	1.508
56	59.20	2.060	1.499
57	63.20	2.020	1.493
58	67.20	1.980	1.487
59	71.20	1.940	1.481
60	75.20	1.900	1.475
61	84.80	1.880	1.469
62	94.40	1.860	1.466
63	100.80	1.840	1.463
64	105.60	1.820	1.460
65	110.40	1.800	1.457
66	130.40	1.780	1.454
67	150.40	1.760	1.451
68	161.60	1.740	1.445
69	172.80	1.720	1.439
70	184.00	1.700	1.436
71	211.20	1.680	1.433
72	238.40	1.660	1.430
73	265.60	1.640	1.420
74	292.80	1.620	1.410
75	320.00	1.600	1.400
76	371.20	1.580	1.390
77	422.40	1.560	1.380
78	473.60	1.540	1.370
79	524.80	1.520	1.360
80	576.00	1.500	1.350
81	627.20	1.490	1.340
82	678.40	1.480	1.330
83	739.20	1.470	1.320
84	800.00	1.460	1.310

Denotes no change in rates

## Attachment A2


**Massachusetts Mutual Life Insurance Company**  
**Gross Premiums for Facility Services with Home and Community Based Services**  
**Preferred / Lifetime / 90 day EP**

Iss Age	\$10 FS with HCBS	CIP Factor	SIP Factor	HC WOP New	HC WOP Existing
40	44.00	2.400	1.750	1.030	1.050
41	45.00	2.380	1.726	1.032	1.052
42	46.00	2.360	1.702	1.034	1.054
43	47.00	2.340	1.678	1.036	1.056
44	48.00	2.320	1.654	1.038	1.058
45	49.00	2.300	1.630	1.040	1.060
46	51.00	2.280	1.612	1.042	1.062
47	53.00	2.260	1.594	1.044	1.064
48	55.00	2.240	1.583	1.046	1.066
49	57.00	2.220	1.571	1.048	1.068
50	59.00	2.200	1.559	1.050	1.070
51	61.00	2.180	1.547	1.052	1.072
52	63.00	2.160	1.535	1.054	1.074
53	65.00	2.140	1.526	1.056	1.076
54	67.00	2.120	1.517	1.058	1.078
55	69.00	2.100	1.508	1.060	1.080
56	74.00	2.060	1.499	1.062	1.082
57	79.00	2.020	1.493	1.064	1.084
58	84.00	1.980	1.487	1.066	1.086
59	89.00	1.940	1.481	1.068	1.088
60	94.00	1.900	1.475	1.070	1.090
61	106.00	1.880	1.469	1.072	1.092
62	118.00	1.860	1.466	1.074	1.094
63	126.00	1.840	1.463	1.076	1.096
64	132.00	1.820	1.460	1.078	1.098
65	138.00	1.800	1.457	1.080	1.100
66	163.00	1.780	1.454	1.082	1.102
67	188.00	1.760	1.451	1.084	1.104
68	202.00	1.740	1.445	1.086	1.106
69	216.00	1.720	1.439	1.088	1.108
70	230.00	1.700	1.436	1.090	1.110
71	264.00	1.680	1.433	1.092	1.112
72	298.00	1.660	1.430	1.094	1.114
73	332.00	1.640	1.420	1.096	1.116
74	366.00	1.620	1.410	1.098	1.118
75	400.00	1.600	1.400	1.100	1.120
76	464.00	1.580	1.390	1.102	1.122
77	528.00	1.560	1.380	1.104	1.124
78	592.00	1.540	1.370	1.106	1.126
79	656.00	1.520	1.360	1.108	1.128
80	720.00	1.500	1.350	1.110	1.130
81	784.00	1.490	1.340	1.112	1.132
82	848.00	1.480	1.330	1.114	1.134
83	924.00	1.470	1.320	1.116	1.136
84	1,000.00	1.460	1.310	1.118	1.138

Denotes no change in rates

**ACTUARIAL CERTIFICATION**

To the best of my knowledge and judgment, the rates for the forms described in this Memorandum and submitted herewith are in compliance with the applicable statutes and rules of the state in which these forms are filed, the reserves are anticipated to be adequate, and the benefits are reasonable in relation to the premiums.

  
\_\_\_\_\_  
Amy Pahl, FSA, MAAA  
Consulting Actuary

March 1, 2001

**Mass Mutual Life Insurance Company**  
**PREFERRED / Lifetime / 90 day EP**

Issue Age	Original \$10 FS	Enhanced \$10 FS	Original \$10 FS with HCBS	Enhanced \$10 FS with HCBS	Original LTD Pay CIP	Enhanced LTD Pay CIP	Original LTD Pay SIP	Enhanced LTD Pay SIP
40	32.00	35.20	40.00	44.00	4.250	3.864	3.000	2.727
41	32.80	36.00	41.00	45.00	4.150	3.781	2.910	2.651
42	33.60	36.80	42.00	46.00	4.050	3.698	2.820	2.575
43	34.40	37.60	43.00	47.00	3.950	3.614	2.730	2.498
44	35.20	38.40	44.00	48.00	3.850	3.529	2.640	2.420
45	36.00	39.20	45.00	49.00	3.750	3.444	2.550	2.342
46	36.80	40.80	46.00	51.00	3.670	3.310	2.460	2.219
47	37.60	42.40	47.00	53.00	3.590	3.184	2.370	2.102
48	38.40	44.00	48.00	55.00	3.510	3.063	2.280	1.990
49	40.00	45.60	50.00	57.00	3.430	3.009	2.190	1.921
50	41.60	47.20	52.00	59.00	3.400	2.997	2.100	1.851
51	43.20	48.80	54.00	61.00	3.330	2.948	2.080	1.841
52	44.80	50.40	56.00	63.00	3.260	2.898	2.060	1.831
53	47.20	52.00	59.00	65.00	3.190	2.896	2.040	1.852
54	49.60	53.60	62.00	67.00	3.120	2.887	2.020	1.869
55	52.00	55.20	65.00	69.00	3.050	2.873	2.000	1.884
56	54.40	59.20	68.00	74.00	2.970	2.729	1.980	1.819
57	56.80	63.20	71.00	79.00	2.890	2.597	1.960	1.762
58	59.20	67.20	74.00	84.00	2.810	2.475	1.940	1.709
59	62.40	71.20	78.00	89.00	2.730	2.393	1.920	1.683
60	65.60	75.20	82.00	94.00	2.650	2.312	1.900	1.657
61	76.00	84.80	95.00	106.00	2.570	2.303	1.880	1.685
62	86.40	94.40	108.00	118.00	2.490	2.279	1.860	1.702
63	92.80	100.80	116.00	126.00	2.410	2.219	1.840	1.694
64	99.20	105.60	124.00	132.00	2.330	2.189	1.820	1.710
65	105.60	110.40	132.00	138.00	2.250	2.152	1.800	1.722
66	125.60	130.40	157.00	163.00	2.200	2.119	1.770	1.705
67	145.60	150.40	182.00	188.00	2.150	2.081	1.740	1.684
68	158.40	161.60	198.00	202.00	2.100	2.058	1.710	1.676
69	171.20	172.80	214.00	216.00	2.050	2.031	1.680	1.664
70	184.00	184.00	230.00	230.00	2.000	2.000	1.650	1.650
71	211.20	211.20	264.00	264.00	1.950	1.950	1.630	1.630
72	238.40	238.40	298.00	298.00	1.900	1.900	1.610	1.610
73	265.60	265.60	332.00	332.00	1.850	1.850	1.590	1.590
74	292.80	292.80	366.00	366.00	1.800	1.800	1.570	1.570
75	320.00	320.00	400.00	400.00	1.800	1.800	1.550	1.550
76	371.20	371.20	464.00	464.00	1.770	1.770	1.530	1.530
77	422.40	422.40	528.00	528.00	1.740	1.740	1.510	1.510
78	473.60	473.60	592.00	592.00	1.710	1.710	1.490	1.490
79	524.80	524.80	656.00	656.00	1.680	1.680	1.470	1.470
80	576.00	576.00	720.00	720.00	1.650	1.650	1.450	1.450
81	627.20	627.20	784.00	784.00	1.630	1.630	1.430	1.430
82	678.40	678.40	848.00	848.00	1.610	1.610	1.410	1.410
83	739.20	739.20	924.00	924.00	1.590	1.590	1.390	1.390
84	800.00	800.00	1,000.00	1,000.00	1.570	1.570	1.370	1.370



Denotes no change in rates



Company  
Number

~~73~~ 14

Form  
Number

MM-200-P

State

VA

Document  
Type

ACTUARIAL MATERIALS -ENHANCEMENT

**Massachusetts Mutual Life Insurance Company**  
 Home Office: Springfield, MA  
 Long Term Care Administrative Office: Post Office Box 4243  
 Woodland Hills, California 91365-4243

**ACTUARIAL ADDENDUM**

**HOME AND COMMUNITY BASED SERVICES  
 WAIVER OF PREMIUM BENEFIT RIDER:**

**FORM MM-200-R11-VA**

**I. GENERAL INFORMATION**

This Actuarial Addendum supplements the Actuarial Memorandum for the following Form, which has been previously filed and approved.

**LONG TERM CARE POLICY**

**FORM MM-200-P-VA**

In addition to the initial filing of the above rider, base policy rates are being increased for ages 40-69 and Compound and Simple Inflation Protection factors are being decreased for ages 40-71. These changes apply to new policyholders only.

**II. SALES DESCRIPTION**

Sales are conducted by individual agents who primarily sell on an individual contract basis. The typical policyholder is a senior citizen without any adequate coverage for long term care services. This form will also be made available to existing policyholders of the above-mentioned policy form for a limited upgrade period.

**III. UNDERWRITING METHODOLOGY**

Strict underwriting criteria are administered with frequent utilization of medical records and paramedical functional assessments, personal history interviews and MIB searches.

**IV. OPTIONAL BENEFIT RIDERS**

Home & Community Based Services Waiver of Premium Benefit Rider (HC WOP) – This rider waives premiums after 90 Home and Community Based Services visits. It is available for new issues and will be offered to existing policyholders for a limited upgrade period.

**V. ACTUARIAL ASSUMPTIONS**

The assumptions described in the original Actuarial Memorandum for the base policy (noted above) are unchanged except as follows:

Claim costs:

Claim costs were adjusted to accommodate the Home and Community Based Services Waiver of Premium Benefit, which is treated as an increment to the Daily Benefit.

**VI. PREMIUM FACTORS: See Attachments A1 and A2**

**Home and Community Based Services Waiver of Premium Benefit Rider:**

**Premiums for this optional rider vary for existing policyholders versus new issues. Premium factors are shown in the attachments. Factors for existing policyholders are higher than for new issues because their benefits are being updated retroactively.**

**VII. LOSS RATIO COMPLIANCE**

**The anticipated loss ratio is equal or in excess of the minimum loss ratio requirement of 60%. The anticipated loss ratio is calculated as the present value of benefits incurred (excluding increase in active life reserves) divided by the present value of annualized earned premiums based on future expected experience of business as documented in the original Actuarial Memorandum.**

## Attachment A1

**Massachusetts Mutual Life Insurance Company**  
**Gross Premiums for Facility Services**  
**Preferred / Lifetime / 90 day EP**

Iss Age	\$10 FS	CIP Factor	SIP Factor
40	35.20	2.400	1.750
41	36.00	2.380	1.726
42	36.80	2.360	1.702
43	37.60	2.340	1.678
44	38.40	2.320	1.654
45	39.20	2.300	1.630
46	40.80	2.280	1.612
47	42.40	2.260	1.594
48	44.00	2.240	1.583
49	45.60	2.220	1.571
50	47.20	2.200	1.559
51	48.80	2.180	1.547
52	50.40	2.160	1.535
53	52.00	2.140	1.526
54	53.60	2.120	1.517
55	55.20	2.100	1.508
56	59.20	2.060	1.499
57	63.20	2.020	1.493
58	67.20	1.980	1.487
59	71.20	1.940	1.481
60	75.20	1.900	1.475
61	84.80	1.880	1.469
62	94.40	1.860	1.466
63	100.80	1.840	1.463
64	105.60	1.820	1.460
65	110.40	1.800	1.457
66	130.40	1.780	1.454
67	150.40	1.760	1.451
68	161.60	1.740	1.445
69	172.80	1.720	1.439
70	184.00	1.700	1.436
71	211.20	1.680	1.433
72	238.40	1.660	1.430
73	265.60	1.640	1.420
74	292.80	1.620	1.410
75	320.00	1.600	1.400
76	371.20	1.580	1.390
77	422.40	1.560	1.380
78	473.60	1.540	1.370
79	524.80	1.520	1.360
80	576.00	1.500	1.350
81	627.20	1.490	1.340
82	678.40	1.480	1.330
83	739.20	1.470	1.320
84	800.00	1.460	1.310

Denotes no change in rates

## Attachment A2

**Massachusetts Mutual Life Insurance Company**  
**Gross Premiums for Facility Services with Home and Community Based Services**  
**Preferred / Lifetime / 90 day EP**

Iss Age	\$10 FS with		SIP Factor	HC WOP	
	HCBS	CIP Factor		New	Existing
40	44.00	2.400	1.750	1.030	1.050
41	45.00	2.380	1.726	1.032	1.052
42	46.00	2.360	1.702	1.034	1.054
43	47.00	2.340	1.678	1.036	1.056
44	48.00	2.320	1.654	1.038	1.058
45	49.00	2.300	1.630	1.040	1.060
46	51.00	2.280	1.612	1.042	1.062
47	53.00	2.260	1.594	1.044	1.064
48	55.00	2.240	1.583	1.046	1.066
49	57.00	2.220	1.571	1.048	1.068
50	59.00	2.200	1.559	1.050	1.070
51	61.00	2.180	1.547	1.052	1.072
52	63.00	2.160	1.535	1.054	1.074
53	65.00	2.140	1.526	1.056	1.076
54	67.00	2.120	1.517	1.058	1.078
55	69.00	2.100	1.508	1.060	1.080
56	74.00	2.060	1.499	1.062	1.082
57	79.00	2.020	1.493	1.064	1.084
58	84.00	1.980	1.487	1.066	1.086
59	89.00	1.940	1.481	1.068	1.088
60	94.00	1.900	1.475	1.070	1.090
61	106.00	1.880	1.469	1.072	1.092
62	118.00	1.860	1.466	1.074	1.094
63	126.00	1.840	1.463	1.076	1.096
64	132.00	1.820	1.460	1.078	1.098
65	138.00	1.800	1.457	1.080	1.100
66	163.00	1.780	1.454	1.082	1.102
67	188.00	1.760	1.451	1.084	1.104
68	202.00	1.740	1.445	1.086	1.106
69	216.00	1.720	1.439	1.088	1.108
70	230.00	1.700	1.436	1.090	1.110
71	264.00	1.680	1.433	1.092	1.112
72	298.00	1.660	1.430	1.094	1.114
73	332.00	1.640	1.420	1.096	1.116
74	366.00	1.620	1.410	1.098	1.118
75	400.00	1.600	1.400	1.100	1.120
76	464.00	1.580	1.390	1.102	1.122
77	528.00	1.560	1.380	1.104	1.124
78	592.00	1.540	1.370	1.106	1.126
79	656.00	1.520	1.360	1.108	1.128
80	720.00	1.500	1.350	1.110	1.130
81	784.00	1.490	1.340	1.112	1.132
82	848.00	1.480	1.330	1.114	1.134
83	924.00	1.470	1.320	1.116	1.136
84	1000.00	1.460	1.310	1.118	1.138

Denotes no change in rates

**ACTUARIAL CERTIFICATION**

To the best of my knowledge and judgment, the rates for the forms described in this Memorandum and submitted herewith are in compliance with the applicable statutes and rules of the state in which these forms are filed, the reserves are anticipated to be adequate, and the benefits are reasonable in relation to the premiums.

  
\_\_\_\_\_  
Amy Pahl, FSA, MAAA  
Consulting Actuary

March 1, 2001

**Mass Mutual Life Insurance Company**  
Composite

Item 1

<u>Pol Yr</u>				Present Val		Cumulative
	<u>Incurred</u>	<u>Earned</u>	<u>Annual</u>	<u>Incurred</u>	<u>Present Val</u>	
	<u>Claims</u>	<u>Premium</u>	<u>Loss Ratio</u>	<u>Claims</u>	<u>Premium</u>	<u>Loss Ratio</u>
1	39,188	1,791,648	2.2%	37,974	1,791,648	2.1%
2	80,891	1,551,819	5.2%	111,573	3,248,755	3.4%
3	171,150	1,452,612	11.8%	257,792	4,529,464	5.7%
4	276,055	1,369,981	20.2%	479,240	5,663,601	8.5%
5	398,143	1,301,366	30.6%	779,133	6,675,183	11.7%
6	542,862	1,239,833	43.8%	1,163,076	7,580,113	15.3%
7	590,523	1,179,652	50.1%	1,555,237	8,388,569	18.5%
8	641,127	1,120,382	57.2%	1,955,018	9,109,542	21.5%
9	696,243	1,061,965	65.6%	2,362,670	9,751,214	24.2%
10	747,477	1,004,246	74.4%	2,773,608	10,320,976	26.9%
11	796,472	820,464	97.1%	3,184,757	10,758,059	29.6%
12	852,918	771,203	110.6%	3,598,173	11,143,824	32.3%
13	908,894	722,658	125.8%	4,011,832	11,483,243	34.9%
14	967,216	674,768	143.3%	4,425,169	11,780,828	37.6%
15	1,010,465	627,025	161.2%	4,830,633	12,040,479	40.1%
16	1,059,264	580,016	182.6%	5,229,736	12,266,004	42.6%
17	1,078,804	524,803	205.6%	5,611,394	12,457,607	45.0%
18	1,092,088	473,748	230.5%	5,974,170	12,620,014	47.3%
19	1,106,528	426,615	259.4%	6,319,310	12,757,337	49.5%
20	1,104,011	383,189	288.1%	6,642,647	12,873,154	51.6%
21	1,105,846	336,880	328.3%	6,946,755	12,968,759	53.6%
22	1,106,460	300,950	367.7%	7,232,461	13,048,955	55.4%
23	1,095,692	268,063	408.7%	7,498,119	13,116,028	57.2%
24	1,085,107	238,059	455.8%	7,745,153	13,171,958	58.8%
25	1,059,716	210,762	502.8%	7,971,682	13,218,452	60.3%
26	1,037,967	185,971	558.1%	8,180,020	13,256,974	61.7%
27	1,014,574	163,558	620.3%	8,371,234	13,288,785	63.0%
28	980,121	143,340	683.8%	8,544,680	13,314,962	64.2%
29	945,599	125,170	755.4%	8,701,804	13,336,427	65.2%
30	898,894	108,897	825.5%	8,842,052	13,353,960	66.2%

# Mass Mutual Life Insurance Company

## Composite

<u>Pol Yr</u>	<u>Paid</u>	<u>Earned</u>	<u>Annual</u>	<u>Present Val</u>		<u>Cumulative</u>
	<u>Claims</u>	<u>Premium</u>	<u>Loss Ratio</u>	<u>Paid</u>	<u>Present Val</u>	
				<u>Claims</u>	<u>Premium</u>	<u>Loss Ratio</u>
1	5,342	1,791,648	0.3%	5,176	1,791,648	0.3%
2	21,709	1,551,819	1.4%	24,928	3,248,755	0.8%
3	56,064	1,452,612	3.9%	72,825	4,529,464	1.6%
4	117,020	1,369,981	8.5%	166,697	5,663,601	2.9%
5	203,575	1,301,366	15.6%	320,035	6,675,183	4.8%
6	315,471	1,239,833	25.4%	543,154	7,580,113	7.2%
7	435,602	1,179,652	36.9%	832,434	8,388,569	9.9%
8	542,526	1,120,382	48.4%	1,170,731	9,109,542	12.9%
9	632,920	1,061,965	59.6%	1,541,307	9,751,214	15.8%
10	701,443	1,004,246	69.8%	1,926,937	10,320,976	18.7%
11	757,404	820,464	92.3%	2,317,919	10,758,059	21.5%
12	814,344	771,203	105.6%	2,712,638	11,143,824	24.3%
13	872,198	722,658	120.7%	3,109,596	11,483,243	27.1%
14	931,135	674,768	138.0%	3,507,513	11,780,828	29.8%
15	990,255	627,025	157.9%	3,904,867	12,040,479	32.4%
16	1,047,549	580,016	180.6%	4,299,557	12,266,004	35.1%
17	1,098,835	524,803	209.4%	4,688,301	12,457,607	37.6%
18	1,139,015	473,748	240.4%	5,066,666	12,620,014	40.1%
19	1,169,129	426,615	274.0%	5,431,332	12,757,337	42.6%
20	1,188,322	383,189	310.1%	5,779,362	12,873,154	44.9%
21	1,198,108	336,880	355.6%	6,108,842	12,968,759	47.1%
22	1,203,752	300,950	400.0%	6,419,670	13,048,955	49.2%
23	1,204,234	268,063	449.2%	6,711,644	13,116,028	51.2%
24	1,200,181	238,059	504.2%	6,984,876	13,171,958	53.0%
25	1,191,316	210,762	565.2%	7,239,537	13,218,452	54.8%
26	1,175,693	185,971	632.2%	7,475,519	13,256,974	56.4%
27	1,155,300	163,558	706.4%	7,693,254	13,288,785	57.9%
28	1,129,933	143,340	788.3%	7,893,212	13,314,962	59.3%
29	1,100,068	125,170	878.9%	8,076,004	13,336,427	60.6%
30	1,065,557	108,897	978.5%	8,242,254	13,353,960	61.7%



Company  
Number

14

Form  
Number

MM-300-P

State

VA

Document  
Type

ACTUARIAL MATERIALS



February 6, 2003

Ms Mary Ann Mason, FLMI, AIE  
Senior Insurance Market Examiner  
Forms and Rates Section, Life and Health Division  
State Corporation Commission  
Bureau of Insurance  
P.O. Box 1157  
Richmond, Virginia 23218

Re: Submission No: 007 0000020015

Dear Ms Mason,

This is in response to your February 3, 2003 letter requesting additional actuarial information for the Massachusetts Mutual Life Insurance Company Long Term Care policy (FORM MM-300-P-VA). The answers are in the same order as in the questions in your letter.

1,2

Here is the revised pricing methodology for Nonforfeiture benefits. This form does not offer Limited Nonforfeiture benefits so I took the reference out.

Pricing methodology for the nonforfeiture benefits:

Full annual claim cost = sum of the premiums paid x ( mortality rate at attained age plus sum of the premiums paid x (nonforfeiture factor based on mortality and incidence rates)

The premiums are then set to produce the desired loss ratio and competitive position.

Pricing of the SBP factor takes into account the probability of surviving to a point where the benefit is payable and the incidence of that benefit being paid. When multiplying these together, the expectation increases by age as does the premium. Premiums are set such that desired loss ratios are met.

3. "We expect the average payment under the weekly benefit to be approximately 10% higher than without the rider"

This is a new feature and no reliable industry data is available. The 10% is an estimate of the additional cost of reimbursement of service on a weekly basis.

The example in the derivation shows how the benefit works. For that example the weekly claim is 100% higher than the claim paid on a daily basis without the rider. Since this additional benefit only raises the maximum allowable reimbursement, the 10% is a reasonable conservative (low) estimate. In other words, while the exposure on a single claim can more than double the cost of a claim, the increased incidence rate (antiselection) is not expected to exceed 10%.

Massachusetts Mutual Life Insurance Company  
Long Term Care Administrative Office  
6400 Canoga Avenue, Suite 100 • Mailing Address: Post Office Box 4243  
Woodland Hills, CA 91365-4243  
(888) 505-8952 • Fax (818) 887-4595

**4 Present Value Pretax Profit of 8% to 10% of PV of premium at 6% interest**

**PV(Investment Income) = 53.9%**

**PV(Paid Benefits) = 63.7%**

**PV(Change in ALR and Claim Reserve) = 51.6%**

**PV(Commission) = 14.3%**

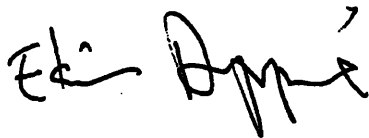
**PV(Expenses) = 14.6%**

**5, 6 Benefit Period Factor derivation**

Attached is a derivation of the benefit period factors. I must stress that the factors derived are only one basis for the factors shown in the actuarial memorandum. The derived factors in the attachment vary according to many parameters such as age, sex and interest rate. A benefit period factor which does not vary by issue age is used for simplicity with respect to marketing and administration. The factors in the actuarial memorandum are the factors applied to policyholders and are in line with current market practice.

I would urge your consultant to contact me if more information is needed.

Sincerely,



**Etienne Dupourqué, FSA, MAAA**  
**Consulting Actuary**  
**(818) 867 2271**  
**[etienne.dupourque@lifecareassurance.com](mailto:etienne.dupourque@lifecareassurance.com)**

Derivation of Benefit Period Factors  
Based on 89 SOA intercompany study, Continuance Table 11

	Benefit Period Factors	
	Calculated	Memo
2 years	0.53	
3 years	0.67	0.63
4 years	0.77	0.78
5 years	0.84	
6 years	0.90	0.88

Males	50	60	70	80	90
Present Value of \$1 Paid Monthly While Claim Open					
90 days EP	\$ 2.13	\$ 2.11	\$ 1.99	\$ 1.85	\$ 1.91
lifetime BP	\$ 15.12	\$ 15.13	\$ 11.80	\$ 8.31	\$ 8.59
2 years BP	\$ 8.21	\$ 7.51	\$ 7.11	\$ 5.92	\$ 6.42
3 years BP	\$ 10.13	\$ 9.63	\$ 8.95	\$ 6.96	\$ 7.59
4 years BP	\$ 11.55	\$ 11.16	\$ 10.15	\$ 7.52	\$ 8.14
5 years BP	\$ 12.61	\$ 12.39	\$ 10.97	\$ 7.84	\$ 8.43
6 years BP	\$ 13.36	\$ 13.33	\$ 11.40	\$ 8.04	\$ 8.56
Ratio of Benefit Period to Lifetime					
2 years BP	0.54	0.50	0.60	0.71	0.75
3 years BP	0.67	0.64	0.76	0.84	0.88
4 years BP	0.76	0.74	0.86	0.90	0.95
5 years BP	0.83	0.82	0.93	0.94	0.98
6 years BP	0.88	0.88	0.97	0.97	1.00

Females	50	60	70	80	90
Present Value of \$1 Paid Monthly While Claim Open					
90 days EP	\$ 2.16	\$ 2.12	\$ 2.02	\$ 2.08	\$ 2.09
lifetime BP	\$ 22.98	\$ 20.98	\$ 15.79	\$ 15.04	\$ 13.97
2 years BP	\$ 8.74	\$ 9.06	\$ 8.29	\$ 8.45	\$ 8.51
3 years BP	\$ 11.45	\$ 11.76	\$ 10.49	\$ 10.85	\$ 10.77
4 years BP	\$ 13.72	\$ 13.96	\$ 12.08	\$ 12.49	\$ 12.20
5 years BP	\$ 15.67	\$ 15.94	\$ 13.29	\$ 13.55	\$ 13.05
6 years BP	\$ 17.34	\$ 17.42	\$ 14.15	\$ 14.21	\$ 13.56
Ratio of Benefit Period to Lifetime					
2 years BP	0.38	0.43	0.53	0.56	0.61
3 years BP	0.50	0.56	0.66	0.72	0.77
4 years BP	0.60	0.67	0.76	0.83	0.87
5 years BP	0.68	0.76	0.84	0.90	0.93
6 years BP	0.75	0.83	0.90	0.94	0.97

Gender Mixed	50	60	70	80	90
Present Value of \$1 Paid Monthly While Claim Open					
90 days EP	\$ 2.15	\$ 2.11	\$ 2.01	\$ 2.01	\$ 2.04
lifetime BP	\$ 20.62	\$ 19.22	\$ 14.59	\$ 13.02	\$ 12.36
2 years BP	\$ 8.58	\$ 8.60	\$ 7.94	\$ 7.69	\$ 7.89
3 years BP	\$ 11.05	\$ 11.12	\$ 10.03	\$ 9.68	\$ 9.81
4 years BP	\$ 13.07	\$ 13.12	\$ 11.50	\$ 10.99	\$ 10.98
5 years BP	\$ 14.75	\$ 14.88	\$ 12.59	\$ 11.84	\$ 11.66
6 years BP	\$ 16.14	\$ 16.20	\$ 13.33	\$ 12.36	\$ 12.06
Ratio of Benefit Period to Lifetime					
2 years BP	0.42	0.45	0.54	0.59	0.64
3 years BP	0.54	0.58	0.69	0.74	0.79
4 years BP	0.63	0.68	0.79	0.84	0.89
5 years BP	0.72	0.77	0.86	0.91	0.94
6 years BP	0.78	0.84	0.91	0.95	0.98

	Age Distribution				
	15%	20%	30%	20%	15%
Male	30%				
Female	70%				
Interest Rate	6%				
Monthly Interest	0%				

**Requestor's Information**Requestor's Name: Trudy WeigelRequestor's Department: ComplianceRequest Date: 2/6/03Request Type: Business: ☒ Personal: ☐ Approval: \_\_\_\_\_

Signature

Package Type: Letter: ☐ Package: ☒**Shipping Information**Recipient: Mary Ann Mason, FLMI, AIE  
Senior Insurance Market ExaminerAddress: Virginia Bureau of Insurance  
E. 1300 Main Street, Suite 1  
Richmond, Virginia 23219

City: \_\_\_\_\_

- Select -

Additional Shipping Information: \_\_\_\_\_

Please return a copy of this form with U.P.S. tracking number to  
Trudy Weigel in Compliance.

**Carrier Options****UPS****Federal Express****Airborne****US Post Office**

<input type="radio"/> Next Day Air Early AM	<input type="radio"/> Priority Overnight ①	<input type="radio"/> Next Day	<input type="radio"/> Express Mail
<input type="radio"/> Next Day Air	<input type="radio"/> Std Overnight ②	<input type="radio"/> Next Afternoon	<input type="radio"/> Priority Mail
<input type="radio"/> Next Day Air Saver	<input type="radio"/> 2 Day	<input type="radio"/> 2 <sup>nd</sup> Day	<input type="radio"/> 1 <sup>st</sup> Class Mail
<input type="radio"/> 2 <sup>nd</sup> Day Air AM	<input type="radio"/> Express Saver ③		
<input checked="" type="radio"/> 2 <sup>nd</sup> Day Air			
<input type="radio"/> 3 Day Select			
<input type="radio"/> Ground Commercial			

**Do Not Write In This Space**

Mailroom Use Only

**Total Shipping Costs**

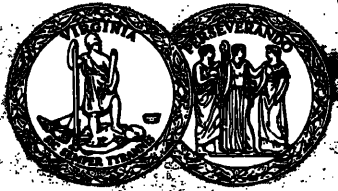
① Next Business morning

② Next business afternoon

③ 3 Business days

# COMMONWEALTH OF VIRGINIA

ALFRED W. GROSS  
COMMISSIONER OF INSURANCE



P.O. BOX 1157  
RICHMOND, VIRGINIA 23218  
TELEPHONE: (804) 371-9741  
TDD/VOICE: (804) 371-9206  
<http://www.state.va.us/sec>

## STATE CORPORATION COMMISSION BUREAU OF INSURANCE

February 3, 2003

MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY  
6400 CANOGA AVE-STE 100  
PO BOX 4243  
WOODLAND HILLS, CA 91365-4243  
Attn: DONNA BENARD  
COMPLIANCE MANAGER

RECEIVED

FEB 05 2003

COMPLIANCE

RE: Submission No: 007 0000020015

Dear Ms. Benard:

Our consulting actuary is requesting responses to the following items in an effort to continue review of the rate filing. Your assistance is greatly appreciated.

1. Regarding Item 3.2), we note that the words "attained age" appear to be missing at the beginning of the second line. Please confirm.
2. Regarding Item 3.2), for the Limited case, why does the Company assume that "if an insured has a nursing claim then there is no nonforfeiture benefit remaining to pay"? Please show whether this assumption is consistent with the description of the benefits under the rider.
3. Regarding Item 3.4), we do not quite follow how the Company obtained the 10% average higher payment than that without the rider. Please clarify.
4. Regarding Item 4, we presume that the 8% to 10% pretax profit is a percentage of the present value of premiums. Please provide the various percentages corresponding to the other components in the equation. [ e.g., PV (Investment Income, etc.)].

What is the interest rate used in the present value?

5. Regarding Item 7, why are there two columns of factors shown as "2 YR"? Please revise accordingly. To avoid any misunderstanding, please explain what 0.28 and 0.13 (for Age 50) represent.

**MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY**

**February 3, 2003**

**Page 2**

6. Regarding Item 7, given that the "4 YR" factor as derived by the Company is 0.74, why did page 7 of the Company's actuarial memorandum show a factor of 0.78 for "4 Year"?

**Please make appropriate revision.**

**When corresponding with us concerning this submission, please refer to the Submission Number noted above, and display your company's NAIC number.**

**Thank you for your courtesy and consideration in this matter.**

**Yours Truly,**

**Mary Ann Mason, FLMI, AIE  
Senior Insurance Market Examiner  
Forms and Rates Section  
Life and Health Division  
Telephone No. (804) 371-9348**

*Actuarial*

January 16, 2003

Ms Mary Ann Mason, FLMI, AIE  
Senior Insurance Market Examiner  
Forms and Rates Section, Life and Health Division  
State Corporation Commission  
Bureau of Insurance  
P.O. Box 1157  
Richmond, Virginia 23218

Re: Submission No: 007 0000020015

Dear Ms Mason:

This is in response to your January 3, 2003 letter requesting additional actuarial information for the Massachusetts Mutual Life Insurance Company Long Term Care policy (FORM MM-300-P-VA). The answers are in the same order as in the questions in your letter.

1. Correct: 30 years is incorrect
2. The policy provides for "contingent benefit upon lapse" in case premiums are increased. Since the actuarial memorandum relates to the proposed rate, it is not addressed.
3.
  - 1) Home and Community Based Services with Assisted Living: 30% of Nursing Home . The Society of Actuaries Long Term Care Experience Committee Intercompany Study (1984-1999) indicates that the average Home Care cost is about 30% of average Nursing Home Cost.

2) Pricing methodology for the nonforfeiture benefits:

Full annual claim cost = sum of the premiums paid x ( mortality rate at plus sum of the premiums paid x ( nonforfeiture factor based on mortality and incidence rates)

Limited annual claim cost = sum of the premiums paid x (probability of never having a nursing claim ) x (mortality rate at attained age) plus sum of the premiums paid x ( nonforfeiture factor based on mortality and incidence rates)

**Massachusetts Mutual Life Insurance Company**  
Long Term Care Administrative Office  
6400 Canoga Avenue, Suite 100 • Mailing Address: Post Office Box 4243  
Woodland Hills, CA 91365-4243  
(888) 505-8952 • Fax (818) 887-4595



For the Limited case, we assume for pricing that if an insured has a nursing claim then there is no nonforfeiture benefit remaining to pay. The premiums are then set to produce the desired loss ratio and competitive position.

Pricing of the SBP factor takes into account the probability of surviving to a point where the benefit is payable and the incidence of that benefit being paid. When multiplying these together, the expectation increases by age as does the premium. Premiums are set such that desired loss ratios are met.

### **3) Caregiver Indemnity Benefit Rider**

This rider makes the full daily benefit payable regardless of the actual charges and it becomes payable regardless of who provides the home and community based services, including family or friends. It is estimated that approximately half of those with two or more ADL deficits or with a cognitive impairment are cared for by the individual's spouse or family member with no substantial cost incurred. Policyholders with this rider would be entitled to benefits and be expected to approximately double the claim cost without that benefit.

The factor applies to the base rates for the reimbursement benefits. The benefits under this rider are on an indemnity basis, adding a 15-20% extra cost. The caregiver cost factor on a reimbursement basis would be about  $2 / 1.15 = 1.74$

Due to the limited experience for this rider, public information and credible experience for the company under review is not available, although federal data from the Health and Human Services department supports the high availability (95%) rate and utilization rate (64%) of informal caregivers.

### **4) Home and Community Based Services Enhancement Rider**

## **Cost for waiver portion**

The rider provides additional waiver of premium coverage when Home and Community care benefits are received. The base policy provides Waiver of Premium benefits only for Nursing Facility benefits.

Average annual premium: \$2,163

Average daily amount waived:  $\$2,163/365 = 5.9$

Average daily benefit: \$100

Additional cost per claim: 5.9%

HCBS average utilization increase factor: 1.55

Loss Ratio: 65%

$$5.9 \times 1.55 / .65 = 14\%$$

#### Cost for weekly benefits

The weekly benefits pays benefits for home and community based services up to the daily benefit times 7 for a given calendar week, compared to the actual number of days of service times the daily benefit. For example, assume 3 days of service in a week, a daily benefit of \$50 and actual daily charge of \$100 per day.

Under the weekly benefit, up to 7 times \$50 could be paid or \$350. In the example, \$300 would be paid and would cover the entire expense.

Under the policy without the enhancement rider, payments would be limited to 3 times \$50 or \$150.

We expect the average payment under the weekly benefit to be approximately 10% higher than without the rider.

Therefore the additional cost for the Enhancement rider could be as much as 25% additional.

#### 5) Limited Family Caregiver Benefit Rider

The rider will pay 75% of the daily benefit selected for HCBS, regardless of expenses incurred. The cost for this rider is a function of the Family Caregiver rider.

FCB = 100% additional

LTD FCB is 75%

1 year benefit as % of Lifetime and 6 year benefit – 50%

HCBC – 25% of the total premium

For the other benefit periods the rider factor is increased since a 1 year benefit period represents a larger percentage of the three year or four year benefit period.

4. Present Value Pretax Profit of 8% to 10% where Profit =  

$$\text{PV(Premium)} + \text{PV(investment Income)} -$$

$$[\text{PV(Benefits)} + \text{PV(Change in Reserve)} +$$

$$\text{PV(Commisssion)} + \text{PV(Expenses)}]$$

**5. Statutory Reserves:**

<b>Morbidity</b>	<b>Pricing Experience</b>
<b>Termination</b>	<b>Lapse + Mortality</b>
<b>Lapse</b>	<b>Duration 1-4: 80% of Pricing lapse</b>
	<b>Duration 5+: lesser of 80% of lapse and 4%</b>

**6. Continuance table: Table 11 of Society of Actuaries 1988-89-90 Report of the Long Term Care Experience Committee. Sex distinct.**

**Calculated at Incurred date**

**Same interest rate as Active Lives reserve.**

**Open claims: based on runoff factors from incurred date derived from internal data.**

**7. Benefit Period Factor derivation**

**Benefit Period Factor derivation  
(from 89 SOA intercompany study)**

**Int = 6%**

**Elim=90**

<b>Age</b>	<b>2 YR</b>	<b>2 YR</b>	<b>3 YR</b>	<b>4 YR</b>	<b>5 YR</b>	<b>Lifetime</b>	<b>Dist.</b>
50	0.28	0.13	0.17	0.21	0.24	0.37	15%
60	1.03	0.36	0.49	0.58	0.67	0.92	20%
70	4.09	1.87	2.46	2.87	3.17	3.77	30%
80	19.41	9.83	12.90	14.91	16.22	18.14	20%
90	53.51	25.19	32.69	37.32	40.00	42.93	15%

**Ratio to Lifetime**

50	0.36	0.47	0.57	0.65	1.00
60	0.39	0.53	0.63	0.72	1.00
70	0.50	0.65	0.76	0.84	1.00
80	0.54	0.71	0.82	0.89	1.00
90	0.59	0.76	0.87	0.93	1.00
	0.48	0.63	0.74	0.81	100%

**The 6 year factor was interpolated from the 5 year factor and 1.**

## **8. Indemnity Benefit Rider**

The rider pays the full daily benefit under the policy regardless of the cost of the service. This is for both facility and home and community based services.

The additional costs originate from three reasons:

Benefits under the base policy are paid to reimburse the actual costs incurred; therefore there will be times that benefits paid will be less than the daily maximum. This savings is not available under this benefit.

The availability of the indemnity rider itself, rather than reimbursement will induce increased utilization.

In the presence of inflation protection and in an environment of low inflation, the additional cost between the indemnity value and the reimbursement value will widen.

We estimate the additional cost arising from these factors to be approximately 15 to 20% of premium.

Recent Actuarial meetings (2002 Boston Annual Meeting, session 137 PD: Claim Studies: what information should I be capturing) indicate that the recent 1984 – 1999 Long-Term Care Experience Committee's Intercompany Study understates Claim severity of indemnity benefits.

## **9. The Limited Family Caregiver Benefit Rider**

The rider will pay 75% of the daily benefit selected for HCBS, regardless of expenses incurred. The cost for this rider is a function of the Family Caregiver rider.

FCB = 100% additional

LTD FCB is 75%

1 year benefit as % of Lifetime and 6 year benefit – 50%

HCBC – 25% of the total premium

$1 \times .75 \times .5 \times .25 = .094$

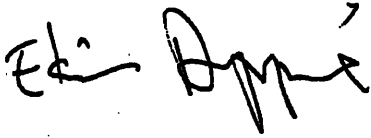
For the other benefit periods the rider factor is increased since a 1 year benefit period represents a larger percentage of the three year or four year benefit period.

For all these riders there is no credible specific experience to calculate an average cost, and the public information available is not reliable due to the multitude of definitions and factors currently in the Long Term Care marketplace.

The approach taken is to estimate conservative incidence rates and average benefit amount for the policy under consideration.

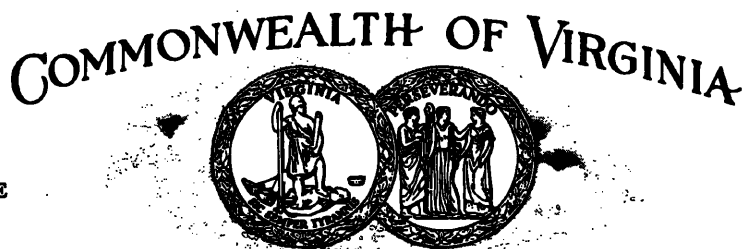
10. The non-level factors are 2.5 of level premium for the first year and .75 for renewal years. For a 30 year cumulative Loss Ratio of 65% for level premium payment and using the lower lapse rate applicable to Limited Pay policies, the resulting non-level Loss Ratio is 68%, about a 5% change in expected Loss Ratio. These factors are the closest possible marketable factors that achieve similar expected results between level and non-level experience.

11. Attachment D reflects the combined results of all assumed distributions as listed in sections IX and XI of the actuarial memorandum.

A handwritten signature in black ink, appearing to read 'Etienne Dupourqué'.

**Etienne Dupourqué, FSA, MAAA**  
**Consulting Actuary**  
**(818) 867 2271**

**ALFRED W. GROSS**  
**COMMISSIONER OF INSURANCE**



**P.O. BOX 1157**  
**RICHMOND, VIRGINIA 23218**  
**TELEPHONE: (804) 371-9741**  
**TDD/VOICE: (804) 371-9206**  
<http://www.state.va.us/sec>

**STATE CORPORATION COMMISSION**  
**BUREAU OF INSURANCE**

January 3, 2003

**MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY**  
**6400 CANOGA AVE-STE 100**  
**PO BOX 4243**  
**WOODLAND HILLS, CA 91365-4243**  
**Attn: DONNA BENARD, COMPLIANCE MANAGER**

**RECEIVED**  
**JAN - 6 2003**  
**COMPLIANCE**

**RE: Submission No: 007 0000020015**

**Dear Ms. Benard:**

Our consulting actuary is requesting additional information in an effort to continue review of the rate filing. Your assistance is appreciated in obtaining responses to the following items.

1. Regarding the last sentence of Section IV, please confirm whether what the Company meant to say was that "The present values obtained beyond the 60 year period are negligible and are therefore ignored."
2. Please confirm whether the Company's policy provides for the "contingent benefit upon lapse" as required under Virginia regulation. (We do not see a discussion of the "contingent benefit upon lapse" in the actuarial memorandum.)
3. Regarding Section VIII, "Claim Cost Development",
  - 1) Please provide the percentages used for Home and Community Based Services.
  - 2) Please provide additional details on how the claim costs for the Shortened Benefit Period Nonforfeiture Rider and the Full Nonforfeiture Rider were developed.
  - 3) Please clarify and provide support for the assumed claim costs used for Caregiver Indemnity Benefit Rider being 100% of the base policy. What assumptions or pricing factors are different between policies with and without this rider attached?
  - 4) Please provide support for the assumed claim costs used for Home and Community Based Services Enhancement Rider being 25% of the individual claim costs.

MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

January 3, 2003

Page 2

- 5) Please provide support for the assumed claim costs used for Limited Family Caregiver Benefit Rider being 10% of the base policy.
4. Please provide all other pricing assumptions or factors (assumptions or factors used in the development of premiums) that are not already provided (e.g., profit objective).
5. Regarding Section H "Statutory Reserves" on page 6, please also provide the assumed claim costs and lapse rates.
6. Please provide the assumptions and methodologies that the Company will use in the calculation of claim reserves (including reserves for open claims).
7. On page 7, please provide support for the Benefit Amount Factors as proposed.
8. On page 8, please provide support for the 1.15 factor proposed for Indemnity Benefit Rider.
9. On page 8, please provide support for the 1.15 and 1.20 factors proposed for the 4 years and 3 years Limited Family Caregiver Benefit Rider. Please relate the discussion to the assumed expected claim cost for Limited Family Caregiver Benefit Rider being 10% of the base policy.
10. On page 9, please provide support for the 2.50 and .75 factors proposed for the Non-level Premium Payment Option.
11. Please confirm whether Attachment D reflects the combined results of all assumed distributions as listed in Sections IX and XI of the actuarial memorandum (including the distributions for age, sex, underwriting class, etc.)

When corresponding with us concerning this submission, please refer to the Submission Number noted above, and display your company's NAIC number.

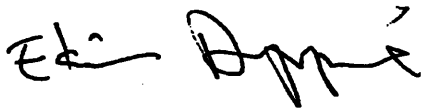
Yours Truly,



Mary Ann Mason, FLMI, AIE  
Senior Insurance Market Examiner  
Forms and Rates Section, Life and Health Division  
Telephone No. (804) 371-9348

# **ACTUARIAL CERTIFICATION**

To the best of my knowledge and judgment, the rates for the forms described in this Memorandum and submitted herewith are in compliance with the applicable statutes and rules of the state in which these forms are filed, the reserves are anticipated to be adequate, and the benefits are reasonable in relation to the premiums.



---

Etienne Dupourque, FSA, MAAA  
Consulting Actuary

January 19, 2003



**Massachusetts Mutual Life Insurance Company(MassMutual)**

Home Office: Springfield, Massachusetts

Long Term Care Administrative Office: Post Office Box 4243

Woodland Hills, California 91365-4243

**ACTUARIAL MEMORANDUM**

LONG TERM CARE INSURANCE POLICY:	FORM MM-300-P-VA
FULL NONFORFEITURE RIDER:	FORM MM-300-R1
SHORTENED BENEFIT PERIOD NONFORFEITURE RIDER:	FORM MM-300-R2
COMPOUND INFLATION PROTECTION RIDER:	FORM MM-300-R3
SIMPLE INFLATION PROTECTION RIDER:	FORM MM-300-R4
INDEMNITY BENEFIT RIDER:	FORM MM-300-R5-VA
CAREGIVER INDEMNITY BENEFIT RIDER:	FORM MM-300-R6-VA
HOME & COMMUNITY BASED SERVICES ENHANCEMENT RIDER:	FORM MM-300-R7-VA
LIMITED FAMILY CAREGIVER BENEFIT RIDER:	FORM MM-300-R8
HOME & COMMUNITY BASED SERVICES:	
WAIVER OF PREMIUM BENEFIT RIDER:	FORM MM-300-R11-VA
RESTORATION OF BENEFITS RIDER:	FORM MM-300-R12
PAID-UP SURVIVOR BENEFIT RIDER:	FORM MM-300-R13

**I. GENERAL INFORMATION**

This Actuarial Memorandum demonstrates that the above-referenced policy and rider forms comply with and exceed the minimum applicable loss ratio for this state. The overall aggregate loss ratios for the entire projection period are anticipated to be:

Long Term Care Insurance Policy (composite): 71%

The Loss Ratio is the ratio of Incurred Claims and Earned Premiums compounded at the annual rate of 6%.

**II. SALES DESCRIPTION**

Sales are conducted by individual agents who primarily sell on an individual contact basis. The typical policyholder is a senior citizen without any adequate coverage for long term care services.

**III. UNDERWRITING METHODOLOGY**

Strict underwriting criteria are administered with frequent utilization of medical records and paramedical functional assessments, personal history interviews and MIB searches.

**IV. PROJECTION PERIOD**

The projection period for these forms is 60 years. It is anticipated that premiums will remain adequate without the need for any rate increases throughout the entire period for which the Company maintains a contractual commitment. The present values obtained beyond the 30 year period are negligible and are therefore ignored.

**GUARANTEED RENEWABLE**

The policy is guaranteed renewable for life. Original issue age premiums are guaranteed for 5 policy years. There is no additional cost for this feature and it is retroactive for current MassMutual policyholders.

**V. BENEFIT AMOUNT**

The policies and riders are available as Lifetime coverage with an Unlimited Benefit Amount or for 3 years (1,095 days), 4 years (1,460 days) or 6 years (2,190 days). The Benefit Amount payable under the policy for Facility Services (Nursing Facility/Assisted Living Facility) and Home and Community Based Services (if covered) is determined by multiplying the daily benefit amount selected by the number of days in the benefit period selected.

**ELIMINATION PERIOD**

The policies and riders are available with an elimination period of 0, 30, 90 or 180 days. The elimination period is a cumulative lifetime deductible. After satisfaction of the elimination period, no further elimination period will be required for any subsequent claims.

**VI. BASE POLICY BENEFITS PER (\$10.00) UNIT OF COVERAGE**

- A. Facility Services Benefit (FS) - Actual expenses incurred up to \$10.00 per day for FS (qualified long term care services, including skilled, intermediate and custodial care) while confined in a qualified Nursing Facility or Assisted Living Facility and maintenance or personal care performed in an Assisted Living Facility. Benefits paid are deducted from the Benefit Amount.
- B. Home and Community Based Services (HCBS) - This optional benefit must be selected by the insured to be covered under the policy. Actual expenses incurred up to \$10.00 per day. Coverage is provided for Home Health Care (services performed through a home health care agency or independent home health caregiver, including care by a professional nurse, therapist, dietician or home health aide, and homemaker services) Adult Day Care, Hospice Care and Caregiver Training. The Caregiver Training benefit payable is a maximum lifetime benefit equal to three times the daily benefit selected. Benefits paid are deducted from the Benefit Amount.
- C. Facility Bed Reservation Benefit - Actual FS expenses incurred up to \$10.00 per day to reserve a bed in a Nursing Facility or Assisted Living Facility during a temporary absence from the facility. Benefit is payable up to 30 days per calendar year. Benefits paid are deducted from the Benefit Amount.
- D. Respite Care - Actual expenses incurred up to \$10.00 per day for FS or HCBS (if covered) payable as short term care to relieve primary caregiver. Benefit is payable up to 30 days per calendar year. Benefits paid are deducted from the Benefit Amount.
- E. Alternative Plan of Care Benefit - Provides for qualified long term care services not specifically shown as being available under the policy, if agreed upon by the insured, licensed health care practitioner and the company, which may include equipment purchases or rentals; permanent or temporary modifications to the insured's residence (such as ramps or rails) or care services not normally covered under the HCBS. The Alternative Plan of Care is not available for providing HCBS on policies providing FS benefits only.
- F. Personal Care Advisor, accessible through toll-free telephone number, is available to insured to provide assistance with any questions about their coverage. The cost of these services is not deducted from the Benefit Amount.
- G. Care Coordination, if after speaking with the Personal Care Advisor, the insured still requires additional care coordination, the company will arrange for a care coordinator to contact the insured. If the insured wishes, a RN will be available to assist with assessment and coordination of appropriate care and services. The cost of these services is not deducted from the Benefit Amount.

- H. Waiver of Premium is provided after confinement in a Nursing Facility or an Assisted Living Facility for a period of 90 days. Premiums already paid, but not earned will be refunded on a pro-rata basis.

## **VII. OPTIONAL BENEFIT RIDERS**

- A. **Full Nonforfeiture Rider (Full NF)** - This rider provides a nonforfeiture benefit without a claims offset in the event of policy lapse. If the policy lapses due to nonpayment of premiums, coverage will continue and benefits will be payable at the daily benefits in effect on the date of lapse. No further benefit increases will occur under any Inflation Protection Rider, if attached to the policy. The Benefit Amount becomes equal to the total of premiums paid for the policy and all riders. Any benefits paid after lapse will be deducted from this new Benefit Amount. Any of the new Benefit Amount that is not paid as benefits after lapse will be paid to the beneficiary upon the insured's death (second-to-die in the case of joint coverage). If the policy lapses due to death of the insured (second-to-die in the case of joint coverage) and has not previously lapsed for nonpayment of premium, the total of premiums paid, with no deduction for benefits paid, will be paid to the beneficiary.
- B. **Shortened Benefit Period Nonforfeiture Rider (SBP)** - This rider provides the nonforfeiture credit as adopted by the NAIC. If the policy has been in force for at least three years and lapses due to nonpayment of premiums, coverage will continue and benefits will be payable based on the daily benefits in effect on the date of lapse. No further benefit increases will occur under any Inflation Protection Rider, if attached to the policy. The Benefit Amount becomes equal to the greater of: (a) the total of premiums paid for the policy and riders; or (b) thirty (30) times the daily benefit in effect on the date of lapse. Any benefits paid after lapse will be deducted from this new Benefit Amount.
- C. **Compound Inflation Protection Rider (CIP)** - This rider increases the daily benefits and the remaining Benefit Amount by 5%, compounded annually. Increases are made regardless of claims status.
- D. **Simple Inflation Protection Rider (SIP)** - This rider increases the daily benefits and the Benefit Amount annually by 5% of the dollar amounts originally issued. The remaining Benefit Amount will be increased by the same proportion as the increase in daily benefits. Increases are made regardless of claims status.
- E. **Indemnity Benefit Rider (IB)** - This rider provides that all benefits covered under the policy will be payable on an indemnity basis at the full daily benefit selected, regardless of actual expenses incurred. This rider is not available if either the CIB or HCBSE Rider is purchased.
- F. **Caregiver Indemnity Benefit Rider (CIB)** - This rider provides that all benefits covered under the policy will be payable on an indemnity basis at the full daily benefit selected, regardless of actual expenses incurred. In addition, benefits for HCBS will be payable regardless of the service provider, which may include any non-professional, family members or friends of the insured. This rider is available only to insureds in the Ultra Preferred risk class and is not available if the IB, HCBSE, LFC Rider, or the 10 or 20 Pay Option is selected.

- G. Home & Community Based Services Enhancement Rider (HCBSE) - This rider provides that all benefits covered under the policy will be payable on a weekly basis rather than a daily basis (Sunday through Saturday) up to seven (7) times the daily benefit. In addition premiums for the policy and riders will be waived following the 90th HCBS visit. Premiums already paid, but not earned will be refunded on a pro-rata basis. This rider is not available if the IB, CIB or HCBSWP Rider is purchased.
- H. Limited Family Caregiver Benefit Rider (LFC) – This rider will pay 75% of the daily benefit selected for HCBS, regardless of expenses incurred. Services may be provided by a family member not living with the insured. Benefits are payable for a lifetime maximum of 365 days. After exhaustion of maximum lifetime benefit, no further premium payments will be due for this rider. This rider is not available if the CIB Rider is purchased.
- I. Home & Community Based Waiver of Premium Benefit Rider (HCBSWP) – This rider waives premiums after 90 HCBS visits. Not available with HCBSE Rider.
- J. Restoration of Benefits Rider (RB) – This rider is available with benefit periods other than Lifetime. If the policy remains in force and claims paid during a single claim period have not exceeded the Benefit Amount and the insured is not eligible for the payment of benefits for 180 consecutive days, the Benefit Amount payable will be restored. Restoration of Benefits is subject to a maximum of twice the Benefit Amount selected.
- K. Paid-Up Survivor Benefit Rider (PSB) – A joint coverage policy to which this rider is attached will be paid-up and no further premium payments due will be required after both of the following have occurred: the end of the 10<sup>th</sup> policy year; the date of the death of either insured. In the event one insured dies prior to the end of the 10<sup>th</sup> policy year, the remaining insured will pay the individual premium rate that would have been charged at the original issue age and risk class for the balance of the 10 year period, after which the policy becomes paid-up. Available with Lifetime payment plans only.

## VIII. CLAIM COST DEVELOPMENT

- A. Claim costs for skilled, intermediate and custodial Facility Services Benefits are derived from The Reports of the Society of Actuaries based on the 1985 National Nursing Home Survey Utilization Data in Transactions, Society of Actuaries, 1988-89-90 Reports; and the Long Term Care Intercompany Study: 1984-1991 Experience in Transactions, Society of Actuaries, 1993-94 Reports.
- B. Claim costs for Home and Community Based Services are decreasing percentages of Facility Services claim costs derived from information provided by a reinsurer.
- C. Claim costs for the Shortened Benefit Period Nonforfeiture Rider and the Full Nonforfeiture Rider are developed by using mortality rates and nonforfeiture benefits appropriate at each duration.
- D. For the Inflation Protection Riders, the foregoing claim costs are increased by 5% each duration (simple interest rider) or compounded by 5% each duration (compound interest rider) to obtain the actual claim costs by duration.
- E. Caregiver Indemnity Benefit Rider expected claim costs are 100% of the base policy.
- F. Claim costs for the Home & Community Based Services Enhancement Rider are 25% of the individual claim costs.

- G. Limited Family Caregiver Benefit Rider expected claim costs are 10% of the base policy.
- H. Claim costs were adjusted to accommodate the Waiver of Premium, which is treated as an increment of the daily benefit.
- I. Claim costs for Restoration of Benefit vary by benefit period.
- J. Claim costs for the Paid-Up Survivor Benefit vary according to issue age and duration and are a function of premium paid.
- K. Claim costs for joint coverage are 170% of the individual claim costs.

**IX. ACTUARIAL ASSUMPTIONS**

A. Ultimate annual claim costs: See Attachments A1 (FS), A2 (FS & ALF), A3 (FS & HCBS)

B. Morbidity: based on the aggregate claim cost development described in the previous section. The select and ultimate durational factors are:

Duration 1	0.1
Duration 2	0.2
Duration 3	0.4
Duration 4	0.6
Duration 5	0.8
Durations 6+	1.0

C. Persistency: varies by duration.  
The persistency shown below is further reduced by mortality.

	<u>Lifetime</u>
Duration 1	92.0%
Duration 2	94.0%
Duration 3	95.0%
Duration 4	96.0%
Duration 5 +	96.5%

For Limited Pay - 98% persistency is assumed during the premium payment period

D. Mortality: 1983 GAM for policy reserves.  
1975-80 Select and Ultimate for developing Facility Services Premiums and nonforfeiture benefits.

E. Interest: Premiums and claims are discounted at an annual rate of 6%. Policy reserves are calculated at the maximum valuation interest rate of 4.5%.

F. Commissions: See Attachment B

**G. Expenses:** Per Policy - 1st year: \$260; Renewal: \$60  
Percentage of Premiums - All years: 7.5%

**H. Statutory Reserves:** Computed on a 1-year full preliminary term basis using 1983 GAM and maximum statutory interest rate.

**I. Underwriting Class Distribution:**

Ultra Preferred: Preferred: Standard: = 6:3:1

**J. Issue Age & Sex Distribution:**

Premiums are assumed to be distributed by age brackets as follows:

<b>Age Groups</b>	<b>Distr %</b>	<b>Male %</b>	<b>Female %</b>
40 to 44	3%	30%	70%
45 to 49	6%	30%	70%
50 to 54	18%	30%	70%
55 to 59	20%	30%	70%
60 to 64	24%	30%	70%
65 to 69	17%	30%	70%
70 to 74	8%	30%	70%
75 to 79	3%	30%	70%
80 to 84	1%	30%	70%

**K. Average Unit Size:** Anticipated to be 9 units. Policies are available from 2 to 30 units.

**L. Average Issue Age:** 60

**M. Average Annual Premium:** based on the anticipated average unit size is: \$2,162.16  
With 3% FS Only: (10 units FS composite)  
With 97% HCBS Benefit: (10 units FS with HCBS)

**N. Policy/Rider Fee:** None.

**X. GROSS PREMIUMS AND PREMIUM FACTORS: See Attachments C (FS) and (FS/HCBS)**

The policies are issued to ages 40-84 on an age nearest birthday basis.

Gross Annual Premiums (per \$10 Daily Benefit) for a preferred risk/lifetime coverage/90 day elimination period are shown in the attachments.

The rates are subject to the following adjustments and factors for plan variations and optional coverages:

A. Elimination Period Factors:	0-Day	1.30
	30-Day	1.15
	90-Day	1.00
	180-Day	.90

B. Benefit Amount Factors:	Lifetime	1.00
	6 Year	.88
	4 Year	.78
	3 Year	.63

C. Risk Classes: Preferred Risk premiums are shown in the table. The following factors are then applied to the Preferred Risk premiums to obtain premiums for Ultra Preferred and Standard Risks:

Ultra Preferred:	.800
Preferred:	1.000
Standard:	1.250

D. Joint Coverage: Premiums for various joint rate combinations are calculated as 150% of the base policy premium of the older insured, times the following factors:

2 Ultra Preferred:	.800
1 Ultra Preferred/1Preferred:	.900
1 Ultra Preferred/1Standard	1.025
2 Preferred:	1.000
1 Preferred/1 Standard:	1.125
2 Standard:	1.250

E. Full Nonforfeiture Rider: Premiums for this optional rider are calculated as a percentage of the base policy premium which varies by issue age. Premium factors are shown in the attachments.

F. Shortened Benefit Period Nonforfeiture Rider:

Premiums for this optional rider are calculated as a percentage of the base policy premium which varies by issue age. Premium factors are shown in the attachments.

**G. Compound Inflation Protection and Simple Inflation Protection Riders:**

Premiums for these optional riders are calculated as a percentage of the gross premiums required for the coverage applied for (without the rider) which varies by issue age. Premium factors are shown in the attachments. These premium factors vary for lifetime pay plans versus limited pay plans.

**H. Indemnity Benefit Rider:** Premiums for this optional rider are an additional 15% of the total premium without this rider. Factor: 1.15

**I. Caregiver Indemnity Benefit Rider:**

Premiums for this optional rider are an additional 100% of the total premium without this rider. Factor: 2.00

**J. HCBS Enhancement Rider:**

Premiums for this optional rider are an additional 20% of the total premium without this rider. Factor: 1.20

**K. Limited Family Caregiver Benefit Rider:**

Additional premium for this optional rider vary according to benefit period.

Additional factors to be applied to the total premium without this rider.

	Factors
Lifetime:	1.10
6 Year:	1.10
4 Years:	1.15
3 Years:	1.20

**L. HCBS Waiver of Premium Rider:**

Premiums for this optional Rider are calculated as a percentage of the base policy premium which varies by issue age. Premium factors are shown in the attachments.

**M. Restoration of Benefits Rider:**

Additional premium for this optional rider vary according to benefit period

Additional factors to be applied to the total premium without this rider:

	Factors
Lifetime:	1.01
6 Year:	1.034
4 Years:	1.051
3 Years:	1.063



**N. Paid-Up Survivor Benefit Rider:**

Premiums for this optional Rider are calculated as a percentage of the base policy premium which varies by issue age. Premium factors are shown in the attachments

**O. 10 Year Premium Payment Option (10-Pay):**

This option provides for a paid-up policy after premiums have been paid for 10 years. Premiums for this option are calculated as a percentage of the base policy premium which varies by issue age.

**P. 20 Year Premium Payment Option (20-Pay):**

This option provides for a paid-up policy after premiums have been paid for 20 years. Premiums for this option are calculated as a percentage of the base policy premium which varies by issue age.

**Q. Non-level Premium Payment Option :**

This option provides for a discount of 25% on renewal premiums with payment of 150% additional on the first year premium. Premium Factors: 1st Year - 2.50: Renewal - .75

**R. Discounts:**

Rates will be discounted (with a corresponding reduction in compensation rates) when the company negotiates with an association or employer group (which may include family members) who offer the product to its employees or members. This discount will be 10% for all ages. In addition, a 10% discount will be available for the employees of MassMutual.

A Cross Sell Discount of 5% on the first year premium will be available if an applicant has a pending application for another type of MassMutual policy or has another MassMutual policy in force for 6 months or less. A 10% discount on the first year premium will be available if the applicant has another type of MassMutual policy in force for 5 years or more.

**S. Modal Premium Factors:** 0.085 PAC/EFT  
0.095 Direct monthly/credit card  
0.27 quarterly  
0.52 semi-annual

**XI. LOSS RATIO COMPLIANCE: See Attachment D:**

**Composite:** A 60 year projection is performed on a policy with 3% FS only and 97% FS/w HCBS (Daily Benefit of \$100) with the following riders/endorsements.

Full Nonforfeiture Rider	2.2%
Shortened Benefit Period Nonforfeiture Rider	1.0%
Compound Inflation Protection Rider	35.0%
Simple Inflation Protection Rider	20.0%
Ten Year Premium Payment Option	5.0%
Twenty Year Premium Payment Option	.0%
Indemnity Benefit Rider	8.0%
Caregiver Indemnity Benefit Rider	0%
HCBS Enhancement Rider	15.0%
Limited Family Caregiver Benefit Rider	0%
HCBS Waiver of Premium Benefit Rider	20.0%
Restoration of Benefit Rider	0%
Paid-Up Survivor Benefit Rider	2%

The anticipated Incurred Claims, Earned Premiums & Loss Ratios are illustrated in Attachment D. The overall cumulative loss ratios are expected to be 71%.

## Attachment A1

**Massachusetts Mutual Life Insurance Company**  
**Ultimate Claim Costs**  
**Nursing Home/ \$100 Daily Benefit**

**Individual**

<b>Attained Age</b>	<b>Claim Costs</b>	<b>Attained Age</b>	<b>Claim Costs</b>
40	17.36	70	392.24
41	17.36	71	458.71
42	19.02	72	536.46
43	20.83	73	627.37
44	22.81	74	733.70
45	24.98	75	858.05
46	27.35	76	1,003.47
47	29.96	77	1,173.53
48	32.81	78	1,372.42
49	35.93	79	1,605.02
50	39.34	80	1,877.03
51	43.09	81	2,045.05
52	47.19	82	2,228.11
53	51.68	83	2,427.56
54	56.59	84	2,644.86
55	61.97	85	2,881.61
56	67.87	86	3,139.55
57	74.33	87	3,420.58
58	81.40	88	3,726.77
59	89.14	89	4,060.37
60	97.62	90	4,423.82
61	112.19	91	4,617.58
62	128.93	92	4,799.20
63	148.17	93	4,966.63
64	170.28	94	5,117.92
65	195.68	95	5,251.25
66	224.88	96	5,365.02
67	258.43	97	5,457.80
68	297.00	98	5,528.44
69	341.31	99	5,576.04

**Joint**

<b>Attained Age</b>	<b>Claim Costs</b>	<b>Attained Age</b>	<b>Claim Costs</b>
40	29.52	70	666.80
41	29.52	71	779.81
42	32.33	72	911.98
43	35.40	73	1,066.54
44	38.77	74	1,247.29
45	42.46	75	1,458.68
46	46.50	76	1,705.89
47	50.92	77	1,995.01
48	55.77	78	2,333.12
49	61.07	79	2,728.53
50	66.88	80	3,190.95
51	73.25	81	3,476.59
52	80.22	82	3,787.79
53	87.85	83	4,126.85
54	96.20	84	4,496.26
55	105.36	85	4,898.73
56	115.38	86	5,337.23
57	126.36	87	5,814.99
58	138.38	88	6,335.51
59	151.54	89	6,902.62
60	165.96	90	7,520.50
61	190.72	91	7,849.88
62	219.18	92	8,158.64
63	251.88	93	8,443.27
64	289.47	94	8,700.46
65	332.66	95	8,927.13
66	382.30	96	9,120.53
67	439.34	97	9,278.26
68	504.89	98	9,398.35
69	580.23	99	9,479.27

## Attachment A2

**Massachusetts Mutual Life Insurance Company**  
**Ultimate Claim Costs**  
**Nursing Home with Assisted Living Facility / \$100 Daily Benefit**

**Individual**

Attained Age	Claim Costs	Attained Age	Claim Costs
40	22.57	70	479.63
41	22.57	71	558.60
42	24.72	72	650.63
43	27.07	73	757.87
44	29.65	74	882.86
45	32.47	75	1,028.54
46	35.56	76	1,198.34
47	38.94	77	1,396.28
48	42.65	78	1,627.03
49	46.70	79	1,896.03
50	51.15	80	2,209.67
51	56.01	81	2,399.26
52	61.34	82	2,605.30
53	67.18	83	2,829.21
54	73.57	84	3,072.56
55	80.57	85	3,337.05
56	88.23	86	3,624.53
57	96.63	87	3,937.02
58	105.27	88	4,276.71
59	114.69	89	4,645.97
60	124.97	90	5,047.41
61	142.90	91	5,253.75
62	163.43	92	5,445.43
63	186.91	93	5,620.27
64	213.80	94	5,776.23
65	244.56	95	5,911.43
66	279.78	96	6,024.24
67	320.10	97	6,113.25
68	366.26	98	6,177.35
69	419.11	99	6,215.72

**Joint**

Attained Age	Claim Costs	Attained Age	Claim Costs
40	38.38	70	815.36
41	38.38	71	949.62
42	42.03	72	1,106.07
43	46.03	73	1,288.38
44	50.40	74	1,500.87
45	55.20	75	1,748.52
46	60.45	76	2,037.19
47	66.20	77	2,373.68
48	72.50	78	2,765.94
49	79.40	79	3,223.26
50	86.95	80	3,756.44
51	95.22	81	4,078.75
52	104.28	82	4,429.01
53	114.20	83	4,809.66
54	125.07	84	5,223.35
55	136.96	85	5,672.99
56	149.99	86	6,161.71
57	164.26	87	6,692.94
58	178.95	88	7,270.40
59	194.97	89	7,898.15
60	212.44	90	8,580.60
61	242.93	91	8,931.37
62	277.82	92	9,257.23
63	317.75	93	9,554.47
64	363.45	94	9,819.59
65	415.76	95	10,049.44
66	475.63	96	10,241.21
67	544.18	97	10,392.52
68	622.65	98	10,501.49
69	712.49	99	10,566.73

**Massachusetts Mutual Life Insurance Company**  
**Ultimate Claim Costs**  
**Nursing Home and Home and Community Based Services / \$100 Daily Benefit**

<b>Individual</b>				<b>Joint</b>			
<b>Attained Age</b>	<b>Claim Costs</b>	<b>Attained Age</b>	<b>Claim Costs</b>	<b>Attained Age</b>	<b>Claim Costs</b>	<b>Attained Age</b>	<b>Claim Costs</b>
40	44.28	70	591.10	40	75.28	70	1,004.87
41	44.28	71	674.31	41	75.28	71	1,146.33
42	48.49	72	778.93	42	82.44	72	1,324.19
43	53.11	73	894.01	43	90.28	73	1,519.81
44	58.16	74	1024.98	44	98.87	74	1,742.46
45	63.69	75	1174.67	45	108.28	75	1,996.93
46	69.75	76	1345.65	46	118.58	76	2,287.60
47	76.39	77	1552.58	47	129.86	77	2,639.39
48	83.65	78	1791.01	48	142.21	78	3,044.72
49	91.61	79	2081.71	49	155.74	79	3,538.90
50	100.33	80	2400.72	50	170.56	80	4,081.23
51	109.87	81	2578.81	51	186.78	81	4,383.98
52	120.32	82	2791.82	52	204.55	82	4,746.10
53	131.77	83	2998.03	53	224.01	83	5,096.66
54	144.31	84	3245.24	54	245.32	84	5,516.91
55	158.04	85	3512.68	55	268.66	85	5,971.55
56	173.07	86	3805.13	56	294.22	86	6,468.73
57	189.54	87	4118.38	57	322.21	87	7,001.25
58	198.29	88	4457.22	58	337.09	88	7,577.27
59	206.01	89	4823.71	59	350.21	89	8,200.31
60	215.36	90	5220.11	60	366.11	90	8,874.19
61	236.83	91	5457.97	61	402.61	91	9,278.56
62	263.66	92	5634.26	62	448.22	92	9,578.24
63	291.74	93	5791.09	63	495.96	93	9,844.85
64	318.75	94	5982.84	64	541.88	94	10,170.83
65	351.25	95	6149.22	65	597.12	95	10,453.67
66	388.59	96	6239.51	66	660.61	96	10,607.18
67	431.84	97	6363.79	67	734.13	97	10,818.45
68	479.05	98	6457.22	68	814.39	98	10,977.27
69	530.74	99	6529.54	69	902.25	99	11,100.22

**Attachment B**

**Massachusetts Mutual Life Insurance Company  
Commission Schedule**

Percent of First Year Premium			
	Lifetime Pay	10-Pay & 20-Pay	
Age Groups	Base & Riders	Base	Excess
40 - 44	70%	70%	70%
45 - 49	65%	65%	65%
50 - 54	60%	60%	60%
55 - 59	55%	55%	55%
60 - 69	50%	50%	50%
70 - 79	45%	45%	45%
80 - 84	40%	40%	40%

Percent of Renewal			
	Base and Riders		
Age Groups	Year 2-5	Year 6-10	Years 11+
40 - 44	6%	3%	1%
45 - 49	6%	3%	1%
50 - 54	6%	3%	1%
55 - 59	6%	3%	1%
60 - 69	6%	3%	1%
70 - 79	6%	3%	1%
80 - 84	6%	3%	1%

**No Renewal Commission on 10 Pay and 20 Pay Options Excess Premium**

## Attachment C

**Massachusetts Mutual Life Insurance Company**  
**Gross Premiums**  
**PREFERRED / Lifetime / 90 day EP**

Issue Age	\$10				NF		Limited Pay		Limited Pay		HCBS	Paid Up
	FS	FS/HCBC	CIP	SIP	Full	SBP	10 Year	20 Year	CIP	SIP	WP	Survivor
40	35.20	44.00	2.400	1.750	1.472	1.243	2.500	1.620	3.864	2.727	1.030	1.400
41	36.00	45.00	2.380	1.726	1.486	1.249	2.480	1.610	3.781	2.651	1.032	1.400
42	36.80	46.00	2.360	1.702	1.500	1.254	2.460	1.600	3.698	2.575	1.034	1.400
43	37.60	47.00	2.340	1.678	1.515	1.260	2.440	1.590	3.614	2.498	1.036	1.400
44	38.40	48.00	2.320	1.654	1.529	1.265	2.420	1.580	3.529	2.420	1.038	1.400
45	39.20	49.00	2.300	1.630	1.543	1.271	2.400	1.570	3.444	2.342	1.040	1.400
46	40.80	51.00	2.280	1.612	1.558	1.276	2.380	1.560	3.310	2.219	1.042	1.400
47	42.40	53.00	2.260	1.594	1.572	1.282	2.360	1.550	3.184	2.102	1.044	1.400
48	44.00	55.00	2.240	1.583	1.586	1.287	2.340	1.540	3.063	1.990	1.046	1.400
49	45.60	57.00	2.220	1.571	1.601	1.293	2.320	1.530	3.009	1.921	1.048	1.400
50	47.20	59.00	2.200	1.559	1.615	1.298	2.300	1.520	2.997	1.851	1.050	1.400
51	48.80	61.00	2.180	1.547	1.629	1.304	2.280	1.510	2.948	1.841	1.052	1.400
52	50.40	63.00	2.160	1.535	1.643	1.309	2.260	1.500	2.898	1.831	1.054	1.400
53	52.00	65.00	2.140	1.526	1.658	1.315	2.240	1.490	2.896	1.852	1.056	1.400
54	53.60	67.00	2.120	1.517	1.672	1.320	2.220	1.480	2.887	1.869	1.058	1.400
55	55.20	69.00	2.100	1.508	1.686	1.326	2.200	1.470	2.873	1.884	1.060	1.400
56	59.20	74.00	2.060	1.499	1.701	1.331	2.180	1.460	2.729	1.819	1.062	1.400
57	63.20	79.00	2.020	1.493	1.715	1.337	2.160	1.450	2.597	1.762	1.064	1.400
58	67.20	84.00	1.980	1.487	1.729	1.342	2.140	1.440	2.475	1.709	1.066	1.400
59	71.20	89.00	1.940	1.481	1.744	1.348	2.120	1.430	2.393	1.683	1.068	1.400
60	75.20	94.00	1.900	1.475	1.758	1.353	2.100	1.420	2.312	1.657	1.070	1.400
61	84.80	106.00	1.880	1.469	1.772	1.359	2.080	1.410	2.303	1.685	1.072	1.400
62	94.40	118.00	1.860	1.466	1.786	1.364	2.060	1.400	2.279	1.702	1.074	1.400
63	100.80	126.00	1.840	1.463	1.801	1.370	2.040	1.390	2.219	1.694	1.076	1.400
64	105.60	132.00	1.820	1.460	1.815	1.375	2.020	1.380	2.189	1.710	1.078	1.400
65	110.40	138.00	1.800	1.457	1.844	1.386	2.000	1.370	2.152	1.722	1.080	1.400
66	130.40	163.00	1.780	1.454	1.872	1.397	1.950	1.360	2.119	1.705	1.082	1.390
67	150.40	188.00	1.760	1.451	1.901	1.408	1.900	1.350	2.081	1.684	1.084	1.380
68	161.60	202.00	1.740	1.445	1.929	1.419	1.850	1.340	2.058	1.676	1.086	1.370
69	172.80	216.00	1.720	1.439	1.958	1.430	1.800	1.330	2.031	1.664	1.088	1.360
70	184.00	230.00	1.700	1.436	1.987	1.441	1.750	1.320	2.000	1.650	1.090	1.350
71	211.20	264.00	1.680	1.433	2.015	1.452	1.700	1.310	1.950	1.630	1.092	1.340
72	238.40	298.00	1.660	1.430	2.044	1.463	1.650	1.300	1.900	1.610	1.094	1.330
73	265.60	332.00	1.640	1.420	2.072	1.474	1.600	1.290	1.850	1.590	1.096	1.320
74	292.80	366.00	1.620	1.410	2.101	1.485	1.550	1.280	1.800	1.570	1.098	1.310
75	320.00	400.00	1.600	1.400	2.115	1.491	1.500	1.270	1.800	1.550	1.100	1.300
76	371.20	464.00	1.580	1.390	2.130	1.496	1.480	1.260	1.770	1.530	1.102	1.300
77	422.40	528.00	1.560	1.380	2.144	1.502	1.460	1.250	1.740	1.510	1.104	1.300
78	473.60	592.00	1.540	1.370	2.158	1.507	1.440	1.240	1.710	1.490	1.106	1.300
79	524.80	656.00	1.520	1.360	2.173	1.513	1.420	1.230	1.680	1.470	1.108	1.300
80	576.00	720.00	1.500	1.350	2.187	1.518	1.400	1.220	1.650	1.450	1.110	1.300
81	627.20	784.00	1.490	1.340	2.201	1.524	1.380	1.210	1.630	1.430	1.112	1.300
82	678.40	848.00	1.480	1.330	2.215	1.529	1.360	1.200	1.610	1.410	1.114	1.300
83	739.20	924.00	1.470	1.320	2.230	1.535	1.340	1.190	1.590	1.390	1.116	1.300
84	800.00	1,000.00	1.460	1.310	2.244	1.540	1.320	1.180	1.570	1.370	1.118	1.300

## Attachment D

**Massachusetts Mutual Life Insurance Company  
Combined Loss Ratio Projection**

<u>Pol Yr</u>	<u>Incurred Claims</u>	<u>Earned Premium</u>	<u>Annual Loss Ratio</u>	<u>Present Val</u>		<u>Cumulative Loss Ratio</u>
				<u>Incurred Claims</u>	<u>Present Val Premium</u>	
1	41,825	1,937,200	2%	40,624	1,937,200	2%
2	86,615	1,779,489	5%	119,990	3,615,963	3%
3	182,281	1,664,997	11%	277,561	5,097,804	5%
4	293,872	1,570,266	19%	517,217	6,416,230	8%
5	422,850	<b>1,492,274</b>	<b>28%</b>	<b>842,536</b>	<b>7,598,250</b>	<b>11%</b>
6	577,567	1,422,577	41%	1,261,735	8,661,282	15%
7	629,002	1,354,120	46%	1,692,424	9,615,883	18%
8	684,744	1,286,662	53%	2,134,742	10,471,587	20%
9	744,773	1,220,199	61%	2,588,604	11,237,155	23%
10	799,258	<b>1,154,528</b>	<b>69%</b>	<b>3,048,100</b>	<b>11,920,518</b>	<b>26%</b>
11	858,178	977,846	88%	3,513,542	12,466,542	28%
12	919,600	919,263	100%	3,984,066	12,950,799	31%
13	986,537	861,466	115%	4,460,266	13,378,921	33%
14	1,055,250	804,455	131%	4,940,803	13,756,081	36%
15	1,100,821	<b>747,424</b>	<b>147%</b>	<b>5,413,716</b>	<b>14,086,667</b>	<b>38%</b>
16	1,155,140	691,131	167%	5,881,875	14,375,052	41%
17	1,173,663	623,626	188%	6,330,618	14,620,540	43%
18	1,197,262	560,857	213%	6,762,471	14,828,823	46%
19	1,218,885	502,699	242%	7,177,238	15,004,941	48%
20	1,209,612	<b>449,009</b>	<b>269%</b>	<b>7,565,551</b>	<b>15,153,344</b>	<b>50%</b>
21	1,203,302	399,586	301%	7,929,973	15,277,936	52%
22	1,192,712	354,289	337%	8,270,742	15,382,152	54%
23	1,186,543	312,878	379%	8,590,559	15,468,978	56%
24	1,178,067	275,287	428%	8,890,118	15,541,047	57%
25	1,141,250	<b>241,283</b>	<b>473%</b>	<b>9,163,888</b>	<b>15,600,639</b>	<b>59%</b>
26	1,105,513	210,606	525%	9,414,075	15,649,710	60%
27	1,067,307	183,055	583%	9,641,943	15,689,947	61%
28	1,033,981	158,367	653%	9,850,201	15,722,787	63%
29	999,512	136,434	733%	10,040,121	15,749,478	64%
30	939,097	<b>117,028</b>	<b>802%</b>	<b>10,208,461</b>	<b>15,771,076</b>	<b>65%</b>
40	880,169	<b>18,989</b>	<b>4635%</b>	<b>11,070,976</b>	<b>15,846,855</b>	<b>70%</b>
50	820,920	<b>1,563</b>	<b>52510%</b>	<b>11,213,849</b>	<b>15,852,398</b>	<b>71%</b>
60	767,233	<b>40</b>	<b>1941419%</b>	<b>11,223,341</b>	<b>15,852,587</b>	<b>71%</b>



Company  
Number 14

Form  
Number MM-400-P

State VA

Document  
Type ACTUARIAL MATERIALS

Massachusetts Mutual Life Insurance Company (MassMutual)  
Home Office: Springfield, Massachusetts  
Long Term Care Administrative Office: Post Office Box 4243  
Woodland Hills, California 91365-4243

ACTUARIAL MEMORANDUM

LONG TERM CARE INSURANCE POLICY:	FORM MM-400-P-VA
FULL SHORTENED BENEFIT PERIOD NONFORFEITURE RIDER:	FORM MM-400-R1-VA
SHORTENED BENEFIT PERIOD NONFORFEITURE RIDER:	FORM MM-400-R2-VA
COMPOUND INFLATION PROTECTION RIDER:	FORM MM-400-R3
SIMPLE INFLATION PROTECTION RIDER:	FORM MM-400-R4
INDEMNITY BENEFIT RIDER:	FORM MM-400-R5-VA
HOME & COMMUNITY BASED SERVICES MONTHLY BENEFIT RIDER:	FORM MM-400-R7
LIMITED FAMILY CAREGIVER BENEFIT RIDER:	FORM MM-400-R8
HOME & COMMUNITY BASED SERVICES WAIVER OF PREMIUM BENEFIT RIDER:	FORM MM-400-R11-VA
RESTORATION OF BENEFITS RIDER:	FORM MM-400-R12
PAID-UP SURVIVOR BENEFIT RIDER:	FORM MM-400-R13
HOME & COMMUNITY BASED SERVICES FIRST DAY COVERAGE RIDER:	FORM MM-400-R14

CONTENTS

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II	<u>SALES DESCRIPTION</u>
III	<u>UNDERWRITING METHODOLOGY</u>
IV	<u>GUARANTEED RENEWABLE</u>
V	<u>BENEFIT AMOUNT</u>
VI	<u>ELIMINATION PERIOD</u>
VII	<u>BASE POLICY BENEFITS PER (\$10.00) UNIT OF COVERAGE</u>
VIII	<u>OPTIONAL BENEFIT RIDERS</u>
IX	<u>CLAIM COST DEVELOPMENT</u>
X	<u>ACTUARIAL ASSUMPTIONS</u>
XI	<u>GROSS PREMIUMS AND PREMIUM FACTORS</u>
XII	<u>ACTUARIAL CERTIFICATION</u>

ATTACHMENTS

**I      GENERAL INFORMATION**

This Actuarial Memorandum demonstrates that the above-referenced policy and rider forms comply the requirements of applicable statutes and rules for this state.

**II     SALES DESCRIPTION**

Sales are conducted by individual agents who primarily sell on an individual contact basis. The typical policyholder is a senior citizen without any adequate coverage for long term care services.

**III    UNDERWRITING METHODOLOGY**

Strict underwriting criteria are administered with frequent utilization of medical records and paramedical functional assessments and personal history interviews.

**IV    GUARANTEED RENEWABLE**

The policy is guaranteed renewable for life.

**V     BENEFIT AMOUNT**

The policies and riders are available as Lifetime coverage with an Unlimited Benefit Amount or for 3 years (1,095 days), 4 years (1,460 days), 5 years (1,825 days), 6 years (2,190 days) or 10 years (3,650 days). The Benefit Amount payable under the policy for Facility Services (Nursing Facility/Assisted Living Facility) and Home and Community Based Services (if covered) is determined by multiplying the daily benefit amount selected by the number of days in the benefit period selected.

**VI    ELIMINATION PERIOD**

The policies and riders are available with an elimination period of 0, 30, 90 or 180 calendar days. The elimination period is a cumulative lifetime deductible. After satisfaction of the elimination period, no further elimination period will be required for any subsequent claims.

**VII   BASE POLICY BENEFITS PER (\$10.00) UNIT OF COVERAGE**

- VII.1    Coverage Outside the United States - Benefits are payable for Qualified Long Term Care Services received outside the United States or its territories, or Canada for up to 30 days per calendar year. Actual expenses incurred up to \$10 per day for covered services. Benefits paid are deducted from the Benefit Amount.
- VII.2    Facility Services Benefit (FS) - Actual expenses incurred up to \$10.00 per day for FS (qualified long term care services, including skilled, intermediate and custodial care) while confined in a qualified Nursing Facility or Assisted Living Facility and maintenance or personal care performed in an Assisted Living Facility. Benefits paid are deducted from the Benefit Amount.
- VII.3    Prescription Drug Benefit - This benefit is payable if Facility Services benefits are being received under the policy. Actual expenses incurred up to \$100.00 per month. Benefit is not payable if benefits for Home and Community Based Services (HCBS) are being paid or when confined in a hospital. Benefits paid are deducted from the Benefit Amount.
- VII.4    Facility Bed Reservation Benefit - Actual FS expenses incurred up to \$10.00 per day to reserve a bed in a Nursing Facility or Assisted Living Facility during a temporary absence from the facility. Benefit is payable up to 60 days per calendar year. Benefits paid are deducted from the Benefit Amount.

- VII.5 HCBS - This optional benefit must be selected by the insured to be covered under the policy. Actual expenses incurred up to \$10.00 per day. Coverage is provided for Home Health Care (services performed through a home health care agency or independent home health caregiver, including care by a professional nurse, therapist, dietician or home health aide, and homemaker services) Adult Day Care, Hospice Care and Caregiver Training. The Caregiver Training benefit payable is a maximum lifetime benefit equal to five times the daily benefit selected. Benefits paid are deducted from the Benefit Amount.
- VII.6 Emergency Response System Benefit - This benefit is payable if benefits are currently being paid for HCBS. Actual expenses incurred up to \$50.00 per month including a device or system installed in the residence that provides a means of communication to request assistance in the event of an emergency. Benefits paid are deducted from the Benefit Amount.
- VII.7 Ambulance Benefit - This benefit is payable if benefits are currently being paid for HCBS. Actual expenses incurred up to \$100.00 per trip for transportation by ambulance to or from a nursing or assisted living facility in order to receive Qualified Long Term Care Services at the facility. Benefit payable for a maximum of 4 ambulance trips per calendar year. Benefits paid are deducted from the Benefit Amount.
- VII.8 Respite Care - Actual expenses incurred up to \$10.00 per day for FS or HCBS (if covered) payable as short term care to relieve primary caregiver. Benefit is payable up to 30 days per calendar year. Benefits paid are deducted from the Benefit Amount.
- VII.9 Alternative Plan of Care Benefit (APC) - Provides for qualified long term care services not specifically shown as being available under the policy for chronically ill individual, if agreed upon by the insured, licensed health care practitioner and the company, which may include equipment purchases or rentals; permanent or temporary modifications to the insured's residence (such as ramps or rails) or care services not normally covered under the HCBS. The APC amount agreed upon, divided by the daily benefit selected, equals the number of subsequent days for which additional benefits for HCBS (if selected) and FS will not be paid under the policy. The APC is not available for providing HCBS on policies providing FS benefits only.
- VII.10 Optional Personal Care Advisor, accessible through toll-free telephone number, is available to insured to provide assistance with any questions about their coverage. The cost of these services is not deducted from the Benefit Amount.
- VII.11 Optional Care Coordination, if after speaking with the Personal Care Advisor, the insured still requests additional care coordination, the company will arrange for a care coordinator to contact the insured. If the insured wishes, a RN will be available to assist with assessment and coordination of appropriate care and services. The cost of these services is not deducted from the Benefit Amount.
- VII.12 Waiver of Premium is provided after confinement in a Nursing Facility or an Assisted Living Facility for a period of 90 calendar days. Premiums already paid, but not earned will be refunded on a pro-rata basis.

## **VIII    OPTIONAL BENEFIT RIDERS**

- VIII.1 Full Shortened Benefit Period Nonforfeiture Rider (Full NF) - This rider provides a nonforfeiture benefit without a claims offset in the event of policy lapse. If the policy lapses due to nonpayment of premiums, coverage will continue and benefits will be payable at the daily benefits in effect on the date of lapse. No further benefit increases will occur under any Inflation Protection Rider, if attached to the policy. The Benefit Amount becomes equal to the total of premiums paid for the policy and all riders. Any benefits paid after lapse will be deducted from this new Benefit Amount. Any of the new Benefit Amount that is not paid as benefits after lapse will be paid to the beneficiary upon the insured's death (second-to-die in the case of joint coverage). If the policy lapses due to death of the insured (second-to-die in the case of joint coverage) and has not previously lapsed for nonpayment of premium, the total of premiums paid, with no deduction for benefits paid, will be paid to the beneficiary.
- VIII.2 Shortened Benefit Period Nonforfeiture Rider (SBP) - This rider provides the nonforfeiture credit as adopted by the NAIC. If the policy has been in force for at least three years and lapses due to nonpayment of premiums, coverage will continue and benefits will be payable based on the daily benefits in effect on the date of lapse. No further benefit increases will occur under any Inflation Protection Rider, if attached to the policy. The Benefit Amount becomes equal to the greater of: (a) the total of premiums paid for the policy and riders; or (b) 30 times the daily benefit in effect on the date of lapse. Any benefits paid after lapse will be deducted from this new Benefit Amount.
- VIII.3 Compound Inflation Protection Rider (CIP) - This rider increases the daily benefits and the remaining Benefit Amount by 5%, compounded annually. Increases are made regardless of claims status.
- VIII.4 Simple Inflation Protection Rider (SIP) - This rider increases the daily benefits and the Benefit Amount annually by 5% of the dollar amounts originally issued. The remaining Benefit Amount will be increased by the same proportion as the increase in daily benefits. Increases are made regardless of claims status.
- VIII.5 Indemnity Benefit Rider (IB) - This rider provides that all benefits covered under the policy will be payable on an indemnity basis at the full daily benefit selected, regardless of actual expenses incurred. This rider is not available if the HCBS Monthly Benefit Rider is purchased.
- VIII.6 HCBS Monthly Benefit Rider (HCBSMB) - This rider provides that all benefits covered under the policy will be payable on a monthly basis rather than a daily weekly basis, up to 31 times the daily benefit selected during any calendar month. Not available with the IB Rider. One of the inflation protection riders must also be selected.
- VIII.7 Limited Family Caregiver Benefit Rider (LFC) - This rider will pay 75% of the daily benefit selected for HCBS, regardless of expenses incurred. Services may be provided by a family member not living with the insured. Benefits are payable for a lifetime maximum of 365 days. After exhaustion of maximum lifetime benefit, no further premium payments will be due for this rider.
- VIII.8 HCBS Waiver of Premium Benefit Rider (HCBSWP) - This rider waives premiums after 90 calendar days of HCBS visits. Premiums paid but not earned will be refunded on a pro-rata basis.
- VIII.9 Restoration of Benefits Rider (RB) - This rider is available with benefit periods other than Lifetime. If the policy remains in force and claims paid during a single claim period have not exceeded the Benefit Amount and the insured is not eligible for the payment of benefits for 180 consecutive days, the Benefit Amount payable will be restored. Restoration of Benefits is subject to a maximum of twice the Benefit Amount selected.

- VIII.10 Paid-Up Survivor Benefit Rider (PSB) - A joint coverage policy to which this rider is attached will be paid-up and no further premium payments due will be required after both of the following have occurred: the end of the 10th policy year; the date of the death of either insured. In the event one insured dies prior to the end of the 10th policy year, the remaining insured will pay the individual premium rate that would have been charged at the original issue age and risk class for the balance of the 10 year period, after which the policy becomes paid-up. Available with Lifetime payment plans only.
- VIII.11 HCBS First Day Coverage Rider (HCBSFD) - This rider allows benefits to be paid on the first day of a claim for HCBS, regardless if a 30, 90 or 180 calendar day elimination period is selected for FS.

## **IX     CLAIM COST DEVELOPMENT**

- IX.1    Claim costs for skilled, intermediate and custodial Facility Services Benefits are derived from The Reports of the Society of Actuaries based on the 1985 National Nursing Home Survey Utilization Data in Transactions, Society of Actuaries, 1988-89-90 Reports; and the Long Term Care Intercompany Study: 1984-1991 Experience in Transactions, Society of Actuaries, 1993-94 Reports.
- IX.2    Claim costs for Home and Community Based Services are decreasing percentages of Facility Services claim costs derived from information provided by a reinsurer.
- IX.3    Claim costs for the Shortened Benefit Period Nonforfeiture rider and the Full Nonforfeiture Rider are developed by using mortality rates and nonforfeiture benefits appropriate at each duration.
- IX.4    For the Inflation Protection riders, the foregoing claim costs are increased by 5% each duration (simple interest rider) or compounded by 5% each duration (compound interest rider) to obtain the actual claim costs by duration.
- IX.5    Indemnity Benefit Rider expected claim costs are 15% of the base policy
- IX.6    Claim costs for the HCBS Monthly Benefit rider are 12% the base policy
- IX.7    Claim costs for the Limited Family Caregiver Benefit rider vary by benefit period (see premiums)
- IX.8    Claim costs for the Waiver of Premium are treated as an increment of the daily benefit
- IX.9    Claim costs for the Restoration of Benefit rider vary by benefit period. (see premiums)
- IX.10   Claim costs for the Paid-Up Survivor Benefit rider vary with issue age and duration and are a function of premium paid.
- IX.11   Claim costs for the HCBS First Day coverage rider vary by benefit period (see premiums)
- IX.12   Claim costs for joint coverage are 150% of the average of the individual claim costs.

## **X    ACTUARIAL ASSUMPTIONS**

**X.1    Ultimate annual claim costs:**  
          See Attachments

**X.2    Morbidity:**  
          Based on the aggregate claim cost development  
          described in the previous section.  
          The select and ultimate durational factors are:  
          Duration        10%  
          Duration        20%  
          Duration        40%  
          Duration        60%  
          Duration        80%  
          Duration        100%

**X.3    Persistency:**  
          See Attachment

**X.4    Mortality:**  
          1983 GAM

**X.5    Interest:**  
          Premiums and claims are discounted at an annual rate of 5%  
          Policy reserves are calculated at the statutory valuation rate of 4.5%

**X.6    Moderately Adverse Experience:**  
          Morbidity:        10% Higher  
          Mortality:        5% Lower  
          Lapse:            50% Lower  
          Interest:        50 Basis Point Lower

**X.7    Commissions:**  
          See Attachment



## X ACTUARIAL ASSUMPTIONS

### X.8 Expenses:

Issue and Underwriting: \$200 per policy  
Percentage of Premiums - All years: 7.5%  
Percentage of Claims - All Years: 7.5%

### Statutory Reserves:

1-year full preliminary term  
1983 GAM and maximum statutory interest rate.

### X.9 Underwriting Class Distribution:

Ultra Preferred: 75%  
Preferred: 20%  
Standard: 5%

### X.10 Issue Age & Sex Distribution:

Age Groups	Distributions		
	Lives	Male	Female
40 to 44	6%	30%	70%
45 to 49	9%	30%	70%
50 to 54	20%	30%	70%
55 to 59	29%	30%	70%
60 to 64	22%	30%	70%
65 to 69	10%	30%	70%
70 to 74	3%	30%	70%
75 to 79	1%	30%	70%
80 to 84	0%	30%	70%

### X.11 Policy Distribution

Joint Policies 54%  
Single Life Policies 46%

### X.12 Average Unit Size:

Anticipated to be 10 units. Policies are available from 5 to 30 units

### X.13 Average Issue Age: 60

### X.14 Average Annual Premium:

based on the anticipated average unit size is: \$2,630  
With 10% FS Only: (10 units FS composite)  
With 90% HCBS Benefit: (10 units FS with HCBS)

### X.15 Policy/Rider Fee: None

## **XI    GROSS PREMIUMS AND PREMIUM FACTORS**

Premium rates and factors are in Attachment

Annual rates shown are based on the following:

- \$10 Daily Benefit
- Individual policy
- Age Nearest Birthday
- Preferred Risk
- 90 Day Elimination Period

The factor for a rider or option is applied to the premium for the coverage applied for without the rider or option

Endorsed Group Discounts:

Employer Group:

10% discount all years for all ages (with commission reduction).

Association Group:

10% discount first year only for all ages (no commission reduction).

MassMutual Employees:

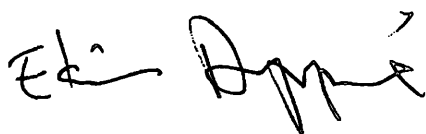
10% discount all years for all ages (with commission reduction).

Multiple MassMutual Discount

10% discount on first year premium only if applicant has a pending application for another type of MassMutual policy or has another type of MassMutual policy in force.

To the best of my knowledge and judgment, the rates for the forms described in this Memorandum and submitted herewith are in compliance with the applicable statutes and rules of the state in which these forms are filed:

- A The rate schedule is sufficient to cover anticipated costs under moderately adverse experience and the premium rate schedule is reasonably expected to be sustainable over the life of the form with no future premium increases anticipated.
- B The policy design and coverage have been taken into consideration.
- C The underwriting and claims adjudication processes have been reviewed and taken into consideration.
- D Statutory reserves are computed based on a 1-year Full Preliminary Term basis using the 1983 GAM table and 4.5% annual interest rate. The assumptions used for reserves contain reasonable margins for adverse experience and the net renewal premium do not increase. In aggregate, the difference between the gross premium and the net valuation premium is sufficient to cover renewal expenses.
- E The premium rate schedule is not less than the premium rate schedule for existing similar policy forms also available from this insurer except for reasonable differences attributable to benefits.



Etienne Dupourqué, FSA, MAAA  
Consulting Actuary

July 27, 2004

# Massachusetts Mutual Life Insurance Company (MassMutual)

## Ultimate Claim Costs Attachment Facility Care/ \$100 Daily Benefit

Individual				Joint			
Attained Age	Claim Costs	Attained Age	Claim Costs	Attained Age	Claim Costs	Attained Age	Claim Costs
40	22.57	70	479.63	40	33.86	70	719.44
41	22.57	71	558.60	41	33.86	71	837.90
42	24.72	72	650.63	42	37.08	72	975.94
43	27.07	73	757.87	43	40.61	73	1136.81
44	29.65	74	882.86	44	44.47	74	1324.29
45	32.47	75	1028.54	45	48.71	75	1542.81
46	35.56	76	1198.34	46	53.34	76	1797.52
47	38.94	77	1396.28	47	58.41	77	2094.42
48	42.65	78	1627.03	48	63.97	78	2440.54
49	46.70	79	1896.03	49	70.06	79	2844.05
50	51.15	80	2209.67	50	76.72	80	3314.51
51	56.01	81	2399.26	51	84.02	81	3598.90
52	61.34	82	2605.30	52	92.01	82	3907.95
53	67.18	83	2829.21	53	100.77	83	4243.81
54	73.57	84	3072.56	54	110.35	84	4608.84
55	80.57	85	3337.05	55	120.85	85	5005.58
56	88.23	86	3624.53	56	132.35	86	5436.80
57	96.63	87	3937.02	57	144.94	87	5905.53
58	105.27	88	4276.71	58	157.90	88	6415.06
59	114.69	89	4645.97	59	172.03	89	6968.96
60	124.97	90	5047.41	60	187.45	90	7571.12
61	142.90	91	5253.75	61	214.35	91	7880.62
62	163.43	92	5445.43	62	245.14	92	8168.15
63	186.91	93	5620.27	63	280.37	93	8430.41
64	213.80	94	5776.23	64	320.69	94	8664.35
65	244.56	95	5911.43	65	366.85	95	8867.15
66	279.78	96	6024.24	66	419.68	96	9036.36
67	320.10	97	6113.25	67	480.16	97	9169.87
68	366.26	98	6177.35	68	549.40	98	9266.02
69	419.11	99	6215.72	69	628.67	99	9323.59

# Massachusetts Mutual Life Insurance Company (MassMutual)

## Ultimate Claim Costs Attachment Facility and Home Health Care / \$100 Daily Benefit

Individual				Joint			
Attained Age	Claim Costs	Attained Age	Claim Costs	Attained Age	Claim Costs	Attained Age	Claim Costs
40	44.28	70	591.10	40	66.42	70	886.65
41	44.28	71	674.31	41	66.42	71	1011.46
42	48.49	72	778.93	42	72.74	72	1168.40
43	53.11	73	894.01	43	79.66	73	1341.01
44	58.16	74	1024.98	44	87.24	74	1537.47
45	63.69	75	1174.67	45	95.54	75	1762.00
46	69.75	76	1345.65	46	104.63	76	2018.47
47	76.39	77	1552.58	47	114.58	77	2328.87
48	83.65	78	1791.01	48	125.48	78	2686.51
49	91.61	79	2081.71	49	137.42	79	3122.56
50	100.33	80	2400.72	50	150.49	80	3601.09
51	109.87	81	2578.81	51	164.81	81	3868.22
52	120.32	82	2791.82	52	180.49	82	4187.74
53	131.77	83	2998.03	53	197.66	83	4497.05
54	144.31	84	3245.24	54	216.46	84	4867.86
55	158.04	85	3512.68	55	237.05	85	5269.02
56	173.07	86	3805.13	56	259.61	86	5707.70
57	189.54	87	4118.38	57	284.30	87	6177.57
58	198.29	88	4457.22	58	297.43	88	6685.82
59	206.01	89	4823.71	59	309.01	89	7235.57
60	215.36	90	5220.11	60	323.03	90	7830.17
61	236.83	91	5457.97	61	355.25	91	8186.96
62	263.66	92	5634.26	62	395.49	92	8451.39
63	291.74	93	5791.09	63	437.61	93	8686.63
64	318.75	94	5982.84	64	478.13	94	8974.27
65	351.25	95	6149.22	65	526.87	95	9223.83
66	388.59	96	6239.51	66	582.89	96	9359.27
67	431.84	97	6363.79	67	647.77	97	9545.69
68	479.05	98	6457.22	68	718.58	98	9685.83
69	530.74	99	6529.54	69	796.11	99	9794.31

**Massachusetts Mutual Life Insurance Company (MassMutual)****Lapse Rates Attachment**

Duration	Lifetime	10 Pay	20 Pay
1	7.00%	2.00%	2.00%
2	4.00%	2.00%	2.00%
3	3.00%	2.00%	2.00%
4	2.50%	2.00%	2.00%
5	2.00%	2.00%	2.00%
6	2.00%	1.50%	1.50%
7	2.00%	1.25%	1.25%
8	2.00%	1.00%	1.00%
9	2.00%	1.00%	1.00%
10	2.00%	0.00%	1.00%
11	2.00%	0.00%	1.00%
12	2.00%	0.00%	1.00%
13	2.00%	0.00%	1.00%
14	2.00%	0.00%	1.00%
15	2.00%	0.00%	1.00%
16	2.00%	0.00%	0.00%
17	2.00%	0.00%	0.00%
18	2.00%	0.00%	0.00%
19	2.00%	0.00%	0.00%
20	2.00%	0.00%	0.00%
21+	2.00%	0.00%	0.00%

# Massachusetts Mutual Life Insurance Company (MassMutual)

## Agent Commission Schedule Attachment

Percent of First Year Premium			
	Lifetime Pay	10-Pay & 20-Pay	
Age Groups	Base & Riders	Base	Excess
40 - 44	70%	70%	70%
45 - 49	65%	65%	65%
50 - 54	60%	60%	60%
55 - 59	55%	55%	55%
60 - 69	50%	50%	50%
70 - 79	45%	45%	45%
80 - 84	40%	40%	40%

Percent of Renewal			
Base and Riders			
Age Groups	Year 2-5	Year 6-10	Years 11+
40 - 44	6%	3%	1%
45 - 49	6%	3%	1%
50 - 54	6%	3%	1%
55 - 59	6%	3%	1%
60 - 69	6%	3%	1%
70 - 79	6%	3%	1%
80 - 84	6%	3%	1%

No Renewal Commission on 10 Pay and 20 Pay Options Excess Premium

**Massachusetts Mutual Life Insurance Company (MassMutual)**

**Rates and Factors Attachment**

Issue Age	ANNUAL RATES PER \$10 DAILY BENEFIT		PREMIUM AND RIDER FACTORS									
	Facility Service	Comprehensive Care	Inflation Protection		Non Forfeiture		10-Pay	20-Pay	Limited Pay IP		HCBS Waiver	Paid Up Survivor
			Compound	Simple	Full	SBP			Compound	Simple		
40	44.00	55.00	3.500	2.552	1.800	1.200	3.000	1.900	4.500	3.176	1.030	1.400
41	44.80	56.00	3.450	2.502	1.810	1.210	2.960	1.880	4.400	3.085	1.032	1.400
42	45.60	57.00	3.400	2.452	1.820	1.220	2.920	1.860	4.300	2.994	1.034	1.400
43	46.40	58.00	3.350	2.402	1.830	1.230	2.880	1.840	4.200	2.903	1.036	1.400
44	47.20	59.00	3.300	2.353	1.840	1.240	2.840	1.820	4.100	2.812	1.038	1.400
45	48.00	60.00	3.250	2.303	1.850	1.250	2.800	1.800	4.000	2.720	1.040	1.400
46	49.60	62.00	3.150	2.227	1.870	1.260	2.760	1.780	3.900	2.615	1.042	1.400
47	51.20	64.00	3.050	2.151	1.890	1.270	2.720	1.760	3.800	2.509	1.044	1.400
48	52.80	66.00	2.950	2.085	1.910	1.280	2.680	1.740	3.700	2.404	1.046	1.400
49	54.40	68.00	2.850	2.017	1.930	1.290	2.640	1.720	3.600	2.298	1.048	1.400
50	56.00	70.00	2.750	1.949	1.950	1.300	2.600	1.700	3.500	2.162	1.050	1.400
51	58.40	73.00	2.700	1.916	1.970	1.310	2.560	1.680	3.400	2.123	1.052	1.400
52	60.80	76.00	2.650	1.883	1.990	1.320	2.520	1.660	3.300	2.085	1.054	1.400
53	63.20	79.00	2.600	1.854	2.010	1.330	2.480	1.640	3.200	2.046	1.056	1.400
54	65.60	82.00	2.550	1.825	2.030	1.340	2.440	1.620	3.100	2.007	1.058	1.400
55	68.00	85.00	2.500	1.795	2.050	1.350	2.400	1.600	3.000	1.967	1.060	1.400
56	73.60	92.00	2.450	1.783	2.070	1.360	2.360	1.580	2.900	1.933	1.062	1.400
57	79.20	99.00	2.400	1.774	2.090	1.370	2.320	1.560	2.800	1.900	1.064	1.400
58	84.80	106.00	2.350	1.765	2.110	1.380	2.280	1.540	2.700	1.864	1.066	1.400
59	90.40	113.00	2.300	1.756	2.130	1.390	2.240	1.520	2.600	1.829	1.068	1.400
60	96.00	120.00	2.250	1.747	2.150	1.400	2.200	1.500	2.500	1.792	1.070	1.400
61	103.20	129.00	2.200	1.719	2.170	1.410	2.160	1.480	2.450	1.793	1.072	1.400
62	110.40	138.00	2.150	1.695	2.190	1.420	2.120	1.460	2.400	1.792	1.074	1.400
63	117.60	147.00	2.100	1.670	2.210	1.430	2.080	1.440	2.350	1.794	1.076	1.400
64	124.80	156.00	2.050	1.645	2.230	1.440	2.040	1.420	2.300	1.797	1.078	1.400
65	132.00	165.00	2.000	1.619	2.250	1.450	2.000	1.400	2.250	1.800	1.080	1.400
66	148.80	186.00	1.950	1.593	2.280	1.460	1.950	1.390	2.200	1.770	1.082	1.390
67	165.60	207.00	1.900	1.566	2.310	1.470	1.900	1.380	2.150	1.740	1.084	1.380
68	182.40	228.00	1.850	1.536	2.340	1.480	1.850	1.370	2.100	1.710	1.086	1.370
69	199.20	249.00	1.800	1.506	2.370	1.490	1.800	1.360	2.050	1.680	1.088	1.360
70	216.00	270.00	1.750	1.478	2.400	1.500	1.750	1.350	2.000	1.650	1.090	1.350
71	244.80	306.00	1.720	1.467	2.430	1.510	1.700	1.340	1.960	1.638	1.092	1.340
72	273.60	342.00	1.690	1.456	2.460	1.520	1.650	1.330	1.920	1.627	1.094	1.330
73	302.40	378.00	1.660	1.437	2.490	1.530	1.600	1.320	1.880	1.616	1.096	1.320
74	331.20	414.00	1.630	1.419	2.520	1.540	1.550	1.310	1.840	1.605	1.098	1.310
75	360.00	450.00	1.600	1.400	2.550	1.550	1.500	1.300	1.800	1.550	1.100	1.300
76	412.80	516.00	1.580	1.390	2.580	1.560	1.480	1.290	1.770	1.530	1.102	1.300
77	465.60	582.00	1.560	1.380	2.610	1.570	1.460	1.280	1.740	1.510	1.104	1.300
78	518.40	648.00	1.540	1.370	2.640	1.580	1.440	1.270	1.710	1.490	1.106	1.300
79	571.20	714.00	1.520	1.360	2.670	1.590	1.420	1.260	1.680	1.470	1.108	1.300
80	624.00	780.00	1.500	1.350	2.700	1.600	1.400	1.250	1.650	1.450	1.110	1.300
81	676.80	846.00	1.490	1.340	2.730	1.610	1.380	1.240	1.630	1.430	1.112	1.300
82	729.60	912.00	1.480	1.330	2.760	1.620	1.360	1.230	1.610	1.410	1.114	1.300
83	782.40	978.00	1.470	1.320	2.790	1.630	1.340	1.220	1.590	1.390	1.116	1.300
84	835.20	1,044.00	1.460	1.310	2.820	1.640	1.320	1.210	1.570	1.370	1.118	1.300

**Factors (do not vary by issue age)**

Joint Factor (Applied to older insured's rate)	1.3
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Indemnity Benefit Rider	1.15
Monthly HCBS	1.12

Individual Risk Class Factors	
Ultra-Preferred (UP)	0.75
Preferred (P)	1.00
Standard (S)	1.25
Joint Risk Class Factors	
2 UP	0.750
1 UP and 1 P	0.875
1 UP and 1 S	1.000
2 P	1.000
1 P and 1 S	1.125
2 S	1.250

Limited Family Caregiver Rider			
Lifetime BP	1.10	5 -Year BP	1.12
10 -Year BP	1.10	4 -Year BP	1.15
6 -Year BP	1.10	3 -Year BP	1.20

Elimination Period Factors (EP)	
0-Day	1.30
30-Day	1.15
90-Day	1.00
180-Day	0.90

HCBS First Day Coverage	
30-Day	1.08
90-Day	1.16
180-Day	1.20

Benefit Period (BP)	
Lifetime	1.00
10-Year	0.95
6-Year	0.88
5-Year	0.85
4-Year	0.78
3-Year	0.63

Modal Factors:	
Annual:	1.000
Semi-Annual:	0.520
Quarterly:	0.270
PAC	0.088

Restoration of Benefits	
10-Year BP	1.011
6-Year BP	1.034
5-Year BP	1.047
4-Year BP	1.051
3-Year BP	1.063



1 : 83GAM; 2 : 80CSO

Val Int : 4.5%

90 days

83GAM

Mort + min(8%,80%\*pricing)  
Mort + min(4%,100%\*pricing)

CLAIM COST DEVELOPMENT

TOTAL CLM COST					TERM RES			COLA FACTOR		HHC FAC		HHC		TOTAL	
1.0220	51.19	0.92453	0.080	0.064	18,056.286	0	0.0	1.000	0.94	239.59	0.20	51.19			
1.0220	119.34	0.93906	9.40138	0.060	0.048	20,354.588	2,165.06	1.050	0.84		0.40	119.34			
1.0220	209.92		9.34918	0.050	0.040	103.61	2,283	1.103	195.68		0.60	209.92			
1.0220	329.18		9.22815	0.040	0.032		4,696	1.158	224.88	0.69	0.80	329.18			
1.0220	485.44		9.03422	0.035	0.035		7,187	1.216	258.43	0.63	1.00	485.44			
1.0220		0.94514	8.86595	0.035	0.035	359.14	9,810				1.00				
1.0220				0.035	0.035	400.24	12,638				1.00				
1.0220				0.035	0.035	444.93	15,688	1.340	341.31	0.51	1.00				
1.0220		0.93905	8.35664	0.035	0.035	495.28	18,979	1.4	458.1	0.42	1.00				
1.0220	1,13.61	0.93652	8.18668	0.035	0.035	561.83	22,512	1.551	536.46	0.40	1.00	963.1			
1.0220	1,423.12	0.93380	8.01914	0.035	0.035	640.6	26,294	1.629	62.3	0.3	1.00	1,423.12			
1.0220	1,25.40	0.93095	8.5501	0.035	0.035	25.55	30,340	1.7	33.0	0.34	1.00	1,25.40			
1.0220	2,091.55	0.92	9.69482	0.035	0.035	818.92	34,656	1.80	858.05	0.31	1.00	2,091.55			
1.0220	2,534.9	0.92414	9.4060	0.035	0.035	921.02	39,249	1.89	1,003.4	0.28	1.00	2,534.9			
1.0220	3,085.52	0.92000	9.3959	0.035	0.035	1,031.61	44,130	1.98	1,13.53	0.26	1.00	3,085.52			
1.0220	3,553.4	0.92000	9.26499	0.035	0.035	1,155.20	49,290	2.08	1,32.42	0.24	1.00	3,553.4			
1.0220	4,590.9	0.92000	9.11621	0.035	0.035	1,293.50	54,436	2.18	1,605.02	0.23	1.00	4,590.9			
1.0220	5,586.1	0.92000	8.9422	0.035	0.035	1,454.6	59,388	2.29	1.8	0.21	1.00	5,586.1			
1.0220	6,333.30	0.93139	8.552	0.035	0.035	1,628.3	63,950	2.41	2,045.05	0.19	1.00	6,333.30			
1.0220	7,212.14	0.9244	8.4532	0.035	0.035	1,79.0	67,461	2.53	2,228.11	0.18	1.00	7,212.14			
1.0220	8,149.2	0.9149	8.16885	0.035	0.035	1,810.41	71,022	2.65	2,42.56	0.16	1.00	8,149.2			
1.0220	9,308.2	0.91039	8.8820	0.035	0.035	1,882.	74,615	2.9	2,644.86	0.15	1.00	9,308.2			
1.0220	10,599.55	0.9026	8.60984	0.035	0.035	1,951.8	78,136	2.93	2,881.61	0.14	1.00	10,599.55			
1.0220	12,069.11	0.89421	8.3361	0.035	0.035	2,006.32	81,519	3.0	3,139.55	0.13	1.00	12,069.11			
1.0220	13,421.0	0.88433	8.0638	0.035	0.035	2,042.80	84,709	3.23	3,420.58	0.12	1.00	13,421.0			
1.0220	15,646.66	0.8302	8.8063	0.035	0.035	2,056.93	87,667	3.26	3.26	0.11	1.00	15,646.66			
1.0220	1,814.8	0.86055	8.55621	0.035	0.035	2,044.61	90,341	3.56	4,060.3	0.10	1.00	1,814.8			
1.0220	20,282.8	0.840	8.31845	0.035	0.035	2,003.30	92,610	3.3	4,423.82	0.09	1.00	20,282.8			
1.0220	22,229.	0.8324	8.09386	0.035	0.035	1,932.03	94,269	3.92	4,61.58	0.09	1.00	22,229.			
1.0220	24,246.98	0.812	8.8824	0.035	0.035	1,633.1	95,951	4.12	4,819.81	0.08	1.00	24,246.98			
1.0220	26,446.62	0.80161	8.68364	0.035	0.035	1,52.3	97,770	4.32	5,030.91	0.0	1.00	26,446.62			
1.0220	28,985.1	0.8430	8.4984	0.035	0.035	1,35.08	99,817	4.54	5,251.25	0.0	1.00	28,985.1			
1.0220	31,638	0.8639	8.32896	0.035	0.035	1,182.00	102,078	4.6	5,481.25	0.0	1.00	31,638			
1.0220	34,648.46	0.4849	8.1360	0.035	0.035	992.83	104,598	5.00	5,21.31	0.06	1.00	34,648.46			
1.0220	3,942.8	0.3119	8.0345	0.035	0.035	810.52	107,545	5.25	5,91.89	0.06	1.00	3,942.8			
1.0220	41,619.33	0.142	8.29190	0.035	0.035	649.53	110,672	5.52	6,233.45	0.06	1.00	41,619.33			
1.0220	45,614.2	0.6980	8.29540	0.035	0.035	508.9	113,744	5.9	6,506.46	0.06	1.00	45,614.2			
1.0220	49,992.6	0.6826	8.268525	0.035	0.035	389.62	116,440	6.08	6,91.42	0.06	1.00	49,992.6			
1.0220	53,629.51	0.66654	8.25936	0.035	0.035	291.55	118,276	6.39	6,938.55	0.06	1.00	53,629.51			
1.0220	5,530.91	0.6496	8.24612	0.035	0.035	208.4	119,972	6.0	6,088.8	0.06	1.00	5,530.91			
1.0220	61,16.13	0.63146	8.23435	0.035	0.035	145.29	121,424	6.04	6,242.45	0.06	1.00	61,16.13			
1.0220	66,205.82	0.61215	8.22441	0.035	0.035	98.42	122,602	3.9935	3,399.35	0.06	1.00	66,205.82			
1.0220	1,022.11	0.5928	8.2155	0.035	0.035	64.63	123,379	5.5965	6	5,59.65	0.06	1,022.11			
1.0220	6,188.8	0.5440	8.20240	0.035	0.035	41.10	123,207	8.15	23.42	0.06	1.00	6,188.8			
1.0220	81,31.32	0.5580	8.195100	0.035	0.035	25.32	120,689	8.904	8.56	8,90.4	0.06	81,31.32			
1.0220	8,6.05	0.54245	8.1809	0.035	0.035	15.16	112,661	80.6169	8,99	8,061.69	0.06	8,6.05			
1.0220	94,055.33	0.52685	8.150416	0.035	0.035	8.82	92,915	82.3634	9.43	8,236.34	0.06	94,055.33			
1.0220	100,89.60	0.52685	8.100000	0.035	0.035	4.99	48,284	84.14	9.91	8,414.	0.06	100,89.60			

# Massachusetts Mutual Life Insurance Company (MassMutual)

## Attachment A2

### Ultimate Claim Costs

#### Facility and Home Health Care / \$100 Daily Benefit

Individual				Joint			
Attained Age	Claim Costs	Attained Age	Claim Costs	Attained Age	Claim Costs	Attained Age	Claim Costs
40	44.28	70	591.10	40	66.42	70	886.65
41	44.28	71	674.31	41	66.42	71	1,011.46
42	48.49	72	778.93	42	72.74	72	1,168.40
43	53.11	73	894.01	43	79.66	73	1,341.01
44	58.16	74	1,024.98	44	87.24	74	1,537.47
45	63.69	75	1,174.67	45	95.54	75	1,762.00
46	69.75	76	1,345.65	46	104.63	76	2,018.47
47	76.39	77	1,552.58	47	114.58	77	2,328.87
48	83.65	78	1,791.01	48	125.48	78	2,686.51
49	91.61	79	2,081.71	49	137.42	79	3,122.56
50	100.33	80	2,400.72	50	150.49	80	3,601.09
51	109.87	81	2,578.81	51	164.81	81	3,868.22
52	120.32	82	2,791.82	52	180.49	82	4,187.74
53	131.77	83	2,998.03	53	197.66	83	4,497.05
54	144.31	84	3,245.24	54	216.46	84	4,867.86
55	158.04	85	3,512.68	55	237.05	85	5,269.02
56	173.07	86	3,805.13	56	259.61	86	5,707.70
57	189.54	87	4,118.38	57	284.30	87	6,177.57
58	198.29	88	4,457.22	58	297.43	88	6,685.82
59	206.01	89	4,823.71	59	309.01	89	7,235.57
60	215.36	90	5,220.11	60	323.03	90	7,830.17
61	236.83	91	5,457.97	61	355.25	91	8,186.96
62	263.66	92	5,634.26	62	395.49	92	8,451.39
63	291.74	93	5,791.09	63	437.61	93	8,686.63
64	318.75	94	5,982.84	64	478.13	94	8,974.27
65	351.25	95	6,149.22	65	526.87	95	9,223.83
66	388.59	96	6,239.51	66	582.89	96	9,359.27
67	431.84	97	6,363.79	67	647.77	97	9,545.69
68	479.05	98	6,457.22	68	718.58	98	9,685.83
69	530.74	99	6,529.54	69	796.11	99	9,794.31

Basic Nursing Claim Costs - 4.5% Discount  
Individual / \$1 DNB

	<u>0 Day</u>	<u>30 Day</u>	<u>90 Day</u>	<u>180 Day</u>	<u>HHC</u>	<u>Incidence Rates</u>
41	0.1889075	0.1828635	0.1736490	0.1637198	1.9322	0.2694
42	0.2070663	0.2003813	0.1901689	0.1791165	1.9322	0.2994
43	0.2269706	0.2195773	0.2082605	0.1959612	1.9322	0.3294
44	0.2487882	0.2406121	0.2280732	0.2143900	1.9322	0.3594
45	0.2727030	0.2636621	0.2497708	0.2345519	1.9322	0.3894
46	0.2989167	0.2889201	0.2735326	0.2566098	1.9322	0.4194
47	0.3276501	0.3165978	0.2995549	0.2807422	1.9322	0.4494
48	0.3591456	0.3469270	0.3280528	0.3071441	1.9322	0.4794
49	0.3936685	0.3801616	0.3592619	0.3360288	1.9322	0.5094
50	0.4315100	0.4165800	0.3934400	0.3676300	1.9322	0.5394
51	0.4729890	0.4564872	0.4308696	0.4022030	1.9322	0.5694
52	0.5184552	0.5002173	0.4718601	0.4400275	1.9322	0.5894
53	0.5682918	0.5481367	0.5167501	0.4814090	1.9322	0.6425
54	0.6229190	0.6006466	0.5659108	0.5266821	1.9322	0.7067
55	0.6827972	0.6581868	0.6197483	0.5762129	1.9322	0.7844
56	0.7484313	0.7212392	0.6787076	0.6304018	1.9322	0.8786
57	0.8203744	0.7903318	0.7432759	0.6896867	1.9322	0.9928
58	0.8992331	0.8660433	0.8139869	0.7545469	1.9322	1.1318
59	0.9856720	0.9490078	0.8914250	0.8255068	1.9322	1.3015
60	1.0804200	1.0399200	0.9762300	0.9031400	1.9322	1.5098
61	1.2455694	1.1973702	1.1218942	1.0354589	1.9322	1.7664
62	1.4359631	1.3786594	1.2892931	1.1871638	1.9322	2.0844
63	1.6554596	1.5873968	1.4816697	1.3610950	1.9322	2.4804
64	1.9085077	1.8277384	1.7027510	1.5605088	1.9322	2.9517
65	2.2002359	2.1044692	1.9568201	1.7891387	1.9322	3.5125
66	2.5365567	2.4230987	2.2487991	2.0512651	1.9322	4.1799
67	2.9242863	2.7899706	2.5843445	2.3517956	1.9322	4.9741
68	3.3712830	3.2123892	2.9699570	2.6963568	1.9332	5.9192
69	3.8866062	3.6987645	3.4131071	3.0913996	1.8873	7.0438
70	4.4807000	4.2587800	3.9223800	3.5443200	1.8362	8.3822
71	5.2485805	4.9857612	4.5871386	4.1383830	2.3176	9.9748
72	6.1480567	5.8368394	5.3645595	4.8320168	2.7826	11.8700
73	7.2016807	6.8331980	6.2737364	5.6419104	3.1601	14.1253
74	8.4358697	7.9996369	7.3369992	6.5875502	3.3807	16.8091
75	9.8815680	9.3651889	8.5804620	7.6916886	3.5171	20.0028
76	11.5750230	10.9638430	10.0346649	8.9808914	3.6210	23.8034
77	13.5586941	12.8353902	11.7353237	10.4861773	3.7258	28.3260
78	15.8823170	15.0264138	13.7242075	12.2437640	3.8398	33.4247
79	18.6041512	17.5914489	16.0501640	14.2959396	3.9348	39.1069
80	21.7924400	20.5943400	18.7703200	16.6920800	3.9873	45.3640
81	23.7638022	22.4519691	20.4505166	18.1683299	4.1924	51.7150
82	25.9134954	24.4771580	22.2811134	19.7751396	4.3024	58.4379
83	28.2576516	26.6850210	24.2755734	21.5240558	4.3742	65.4505
84	30.8138622	29.0920353	26.4485643	23.4276463	4.4491	72.6500
85	33.6013097	31.7161645	28.8160673	25.4995907	4.5018	79.9150
86	36.6409119	34.5769927	31.3954936	27.7547781	4.5108	87.1074
87	39.9554792	37.6958704	34.2058134	30.2094147	4.4508	94.0760
88	43.5698849	41.0960737	37.2676947	32.8811396	4.3443	100.6613
89	47.5112527	44.8029787	40.6036556	35.7891523	4.2341	106.7009
90	51.8091600	48.8442500	44.2382300	38.9543500	4.1315	113.1030
91	54.1017839	50.9995946	46.1757593	40.6404247	3.8668	119.8892
92	56.4958595	53.2500478	48.1981478	42.3994783	3.6452	127.0825
93	58.9958761	55.5998065	50.3091120	44.2346696	3.4717	134.7075
94	61.6065217	58.0532528	52.5125315	46.1492942	3.3407	142.7899
95	64.3326919	60.6149620	54.8124556	48.1467901	3.2381	151.3573
96	67.1794987	63.2897114	57.2131108	50.2307443	3.1553	160.4388
97	70.1522804	66.0824892	59.7189090	52.4048990	3.0845	170.0651
98	73.2566117	68.9985036	62.3344553	54.6731585	2.9629	180.2690
99	76.4983138	72.0431926	65.0645562	57.0395958	2.8567	191.0851
100	79.8834655	75.2222343	67.9142291	59.5084604	2.8468	202.5502
101	81.6318078	76.8639800	69.3855327	60.7826810	2.8184	214.7033
102	83.4184146	78.5415572	70.8887108	62.0841857	2.7902	227.5855
103	85.2441234	80.2557479	72.4244540	63.4135589	2.7623	241.2406
104	87.1097899	82.0073514	73.9934678	64.7713971	2.7347	255.7150
105	89.0162887	83.7971841	75.5964729	66.1583099	2.7073	271.0579
106	90.9645134	85.6260803	77.2342058	67.5749200	2.6802	287.3214
107	92.9553773	87.4948928	78.9074187	69.0218630	2.6534	304.5607
108	94.9898136	89.4044925	80.6168804	70.4997887	2.6269	322.8343
109	97.0687759	91.3557698	82.3633760	72.0093603	2.6006	342.2044
110	99.1932386	93.3496343	84.1477080	73.5512555	2.5746	362.7366

Generation 3 Claim Costs

	0 Day	30 Day	90 Day	180 Day	HHC FACTOR
0	0.188908	0.182864	0.173649	0.163720	1.55
1	0.188908	0.182864	0.173649	0.163720	1.55
2	0.188908	0.182864	0.173649	0.163720	1.55
3	0.188908	0.182864	0.173649	0.163720	1.55
4	0.188908	0.182864	0.173649	0.163720	1.55
5	0.188908	0.182864	0.173649	0.163720	1.55
6	0.188908	0.182864	0.173649	0.163720	1.55
7	0.188908	0.182864	0.173649	0.163720	1.55
8	0.188908	0.182864	0.173649	0.163720	1.55
9	0.188908	0.182864	0.173649	0.163720	1.55
10	0.188908	0.182864	0.173649	0.163720	1.55
11	0.188908	0.182864	0.173649	0.163720	1.55
12	0.188908	0.182864	0.173649	0.163720	1.55
13	0.188908	0.182864	0.173649	0.163720	1.55
14	0.188908	0.182864	0.173649	0.163720	1.55
15	0.188908	0.182864	0.173649	0.163720	1.55
16	0.188908	0.182864	0.173649	0.163720	1.55
17	0.188908	0.182864	0.173649	0.163720	1.55
18	0.188908	0.182864	0.173649	0.163720	1.55
19	0.188908	0.182864	0.173649	0.163720	1.55
20	0.188908	0.182864	0.173649	0.163720	1.55
21	0.188908	0.182864	0.173649	0.163720	1.55
22	0.188908	0.182864	0.173649	0.163720	1.55
23	0.188908	0.182864	0.173649	0.163720	1.55
24	0.188908	0.182864	0.173649	0.163720	1.55
25	0.188908	0.182864	0.173649	0.163720	1.55
26	0.188908	0.182864	0.173649	0.163720	1.55
27	0.188908	0.182864	0.173649	0.163720	1.55
28	0.188908	0.182864	0.173649	0.163720	1.55
29	0.188908	0.182864	0.173649	0.163720	1.55
30	0.188908	0.182864	0.173649	0.163720	1.55
31	0.188908	0.182864	0.173649	0.163720	1.55
32	0.188908	0.182864	0.173649	0.163720	1.55
33	0.188908	0.182864	0.173649	0.163720	1.55
34	0.188908	0.182864	0.173649	0.163720	1.55
35	0.188908	0.182864	0.173649	0.163720	1.55
36	0.188908	0.182864	0.173649	0.163720	1.55
37	0.188908	0.182864	0.173649	0.163720	1.55
38	0.188908	0.182864	0.173649	0.163720	1.55
39	0.188908	0.182864	0.173649	0.163720	1.55
40	0.188908	0.182864	0.173649	0.163720	1.55
41	0.188908	0.182864	0.173649	0.163720	1.55
42	0.207066	0.200381	0.190169	0.179117	1.55
43	0.226971	0.219577	0.208261	0.195961	1.55
44	0.248788	0.240612	0.228073	0.214390	1.55
45	0.272703	0.263662	0.249771	0.234552	1.55
46	0.298917	0.288920	0.273533	0.256610	1.55
47	0.327650	0.316598	0.299555	0.280742	1.55
48	0.359146	0.346927	0.328053	0.307144	1.55
49	0.393669	0.380162	0.359262	0.336029	1.55
50	0.431510	0.416580	0.393440	0.367630	1.55
51	0.472989	0.456487	0.430870	0.402203	1.55
52	0.518455	0.500217	0.471860	0.440027	1.55
53	0.568292	0.548137	0.516750	0.481409	1.55
54	0.622919	0.600647	0.565911	0.526682	1.55
55	0.682797	0.658187	0.619748	0.576213	1.55
56	0.748431	0.721239	0.678708	0.630402	1.55
57	0.820374	0.790332	0.743276	0.689687	1.55
58	0.899233	0.866043	0.813987	0.754547	1.43
59	0.985672	0.949008	0.891425	0.825507	1.30

Generation 3 Claim Costs

	0 Day	30 Day	90 Day	180 Day	HHC FACTOR
60	1.080420	1.039920	0.976230	0.903140	1.19
61	1.245569	1.197370	1.121894	1.035459	1.09
62	1.435963	1.378659	1.289293	1.187164	1.02
63	1.655460	1.587397	1.481670	1.361095	0.94
64	1.908508	1.827738	1.702751	1.560509	0.84
65	2.200236	2.104469	1.956820	1.789139	0.76
66	2.536557	2.423099	2.248799	2.051265	0.69
67	2.924286	2.789971	2.584345	2.351796	0.63
68	3.371283	3.212389	2.969957	2.696357	0.57
69	3.886606	3.698764	3.413107	3.091400	0.51
70	4.480700	4.258780	3.922380	3.544320	0.46
71	5.248581	4.985761	4.587139	4.138383	0.42
72	6.148057	5.836839	5.364560	4.832017	0.40
73	7.201681	6.833198	6.273736	5.641910	0.37
74	8.435870	7.999637	7.336999	6.587550	0.34
75	9.881568	9.365189	8.580462	7.691689	0.31
76	11.575023	10.963843	10.034665	8.980891	0.28
77	13.558694	12.835390	11.735324	10.486177	0.26
78	15.882317	15.026414	13.724207	12.243764	0.24
79	18.604151	17.591449	16.050164	14.295940	0.23
80	21.792440	20.594340	18.770320	16.692080	0.21
81	23.763802	22.451969	20.450517	18.168330	0.19
82	25.913495	24.477158	22.281113	19.775140	0.18
83	28.257652	26.685021	24.275573	21.524056	0.16
84	30.813862	29.092035	26.448564	23.427646	0.15
85	33.601310	31.716165	28.816067	25.499591	0.14
86	36.640912	34.576993	31.395494	27.754778	0.13
87	39.955479	37.695870	34.205813	30.209415	0.12
88	43.569885	41.096074	37.267695	32.881140	0.11
89	47.511253	44.802979	40.603656	35.789152	0.10
90	51.809160	48.844250	44.238230	38.954350	0.09
91	54.101784	50.999595	46.175759	40.640425	0.09
92	56.495860	53.250048	48.198148	42.399478	0.08
93	58.995876	55.599807	50.309112	44.234670	0.07
94	61.606522	58.053253	52.512532	46.149294	0.07
95	64.332692	60.614962	54.812456	48.146790	0.07
96	67.179499	63.289711	57.213111	50.230744	0.06
97	70.152280	66.082489	59.718909	52.404899	0.06
98	73.256612	68.998504	62.334455	54.673158	0.06
99	76.498314	72.043193	65.064556	57.039596	0.06
100	79.883465	75.222234	67.914229	59.508460	0.06
101	81.631808	76.863980	69.385533	60.782681	0.06
102	83.418415	78.541557	70.888711	62.084186	0.06
103	85.244123	80.255748	72.424454	63.413559	0.06
104	87.109790	82.007351	73.993468	64.771397	0.06
105	89.016289	83.797184	75.596473	66.158310	0.06
106	90.964513	85.626080	77.234206	67.574920	0.06
107	92.955377	87.494893	78.907419	69.021863	0.06
108	94.989814	89.404493	80.616880	70.499789	0.06
109	97.068776	91.355770	82.363376	72.009360	0.06
110	99.193239	93.349634	84.147708	73.551256	0.06

**-- 1994 GAM --**

							Blended Table		
Male			Female			40% male			
798732.3			878979.2			at age 70			
Age	qx	lx	adj lx	qx	lx	adj lx	qx	lx	weighted average
0		1000000	500794		1000000	682610	0.000	1183404	0.000
1	0.592	1000000	500794	0.531	1000000	682610	0.557	1183404	0.555
2	0.400	999408	500497	0.346	999469	682248	0.369	1182745	0.368
3	0.332	999008.2	500297	0.258	999123.2	682011	0.289	1182308	0.288
4	0.259	998676.6	500131	0.194	998865.4	681836	0.222	1181966	0.220
5	0.237	998417.9	500001	0.175	998671.6	681703	0.201	1181705	0.200
6	0.227	998181.3	499883	0.163	998496.9	681584	0.190	1181467	0.189
7	0.217	997954.7	499769	0.153	998334.1	681473	0.180	1181242	0.179
8	0.201	997738.1	499661	0.137	998181.4	681369	0.164	1181029	0.163
9	0.194	997537.6	499560	0.130	998044.6	681275	0.157	1180836	0.156
10	0.197	997344.1	499464	0.131	997914.9	681187	0.159	1180650	0.157
11	0.208	997147.6	499365	0.138	997784.1	681097	0.168	1180463	0.166
12	0.226	996940.2	499261	0.148	997646.4	681003	0.181	1180265	0.179
13	0.255	996714.9	499148	0.164	997498.8	680903	0.202	1180051	0.200
14	0.297	996460.7	499021	0.189	997335.2	680791	0.235	1179812	0.232
15	0.345	996164.8	498873	0.216	997146.7	680662	0.271	1179535	0.268
16	0.391	995821.1	498701	0.242	996931.3	680515	0.305	1179216	0.302
17	0.430	995431.7	498506	0.262	996690.1	680351	0.333	1178856	0.329
18	0.460	995003.7	498291	0.273	996428.9	680172	0.352	1178464	0.348
19	0.484	994546	498062	0.280	996156.9	679987	0.366	1178049	0.362
20	0.507	994064.6	497821	0.284	995878	679796	0.378	1177617	0.373
21	0.530	993560.6	497569	0.286	995595.2	679603	0.389	1177172	0.384
22	0.556	993034.1	497305	0.289	995310.4	679409	0.402	1176714	0.396
23	0.589	992481.9	497029	0.292	995022.8	679212	0.417	1176241	0.411
24	0.624	991897.4	496736	0.291	994732.2	679014	0.432	1175750	0.424
25	0.661	991278.4	496426	0.291	994442.8	678817	0.447	1175242	0.439
26	0.696	990623.2	496098	0.294	994153.4	678619	0.464	1174717	0.455
27	0.727	989933.7	495752	0.302	993861.1	678420	0.481	1174172	0.472
28	0.754	989214	495392	0.314	993560.9	678215	0.500	1173607	0.490
29	0.779	988468.2	495019	0.331	993249	678002	0.520	1173020	0.510
30	0.801	987698.1	494633	0.351	992920.2	677777	0.541	1172410	0.531
31	0.821	986907	494237	0.373	992571.7	677539	0.562	1171776	0.552
32	0.839	986096.7	493831	0.397	992201.5	677287	0.583	1171118	0.574
33	0.848	985269.4	493417	0.422	991807.6	677018	0.602	1170434	0.592
34	0.849	984433.9	492998	0.449	991389	676732	0.618	1169730	0.609
35	0.851	983598.1	492580	0.478	990943.9	676428	0.635	1169008	0.627
36	0.862	982761.1	492160	0.512	990470.2	676105	0.659	1168265	0.652
37	0.891	981913.9	491736	0.551	989963.1	675759	0.694	1167495	0.687
38	0.939	981039	491298	0.598	989417.6	675386	0.742	1166684	0.734
39	0.999	980117.8	490837	0.652	988825.9	674982	0.798	1165819	0.791
40	1.072	979138.7	490346	0.709	988181.2	674542	0.862	1164889	0.854
41	1.156	978089.1	489821	0.768	987480.6	674064	0.931	1163885	0.923
42	1.252	976958.4	489255	0.825	986722.2	673546	1.005	1162801	0.996
43	1.352	975735.2	488642	0.877	985908.2	672991	1.077	1161633	1.067
44	1.458	974416.1	487981	0.923	985043.5	672401	1.148	1160382	1.137
45	1.578	972995.4	487270	0.973	984134.3	671780	1.227	1159050	1.215
46	1.722	971460	486501	1.033	983176.8	671126	1.323	1157627	1.309
47	1.899	969787.1	485663	1.112	982161.2	670433	1.443	1156096	1.427
48	2.102	967945.5	484741	1.206	981069	669688	1.582	1154428	1.564
49	2.326	965910.9	483722	1.310	979885.8	668880	1.736	1152602	1.716
50	2.579	963664.2	482597	1.428	978602.2	668004	1.911	1150600	1.888
51	2.872	961178.9	481352	1.568	977204.7	667050	2.115	1148402	2.090
52	3.213	958418.4	479970	1.734	975672.5	666004	2.353	1145974	2.326
53	3.584	955339	478428	1.907	973980.7	664849	2.609	1143277	2.578
54	3.979	951915	476713	2.084	972123.3	663581	2.876	1140294	2.842
55	4.425	948127.4	474816	2.294	970097.4	662198	3.184	1137014	3.146
56	4.949	943931.9	472715	2.563	967872	660679	3.558	1133394	3.517
57	5.581	939260.4	470376	2.919	965391.3	658986	4.028	1129361	3.984
58	6.300	934018.4	467750	3.359	962573.3	657062	4.582	1124813	4.535
59	7.090	928134.1	464804	3.863	959340.1	654855	5.203	1119659	5.154
60	7.976	921553.6	461508	4.439	955634.1	652325	5.905	1113834	5.854
61	8.986	914203.3	457827	5.093	951392.1	649430	6.703	1107257	6.650

**-- 1994 GAM --**

										<b>Blended Table</b>	
<b>Male</b>					<b>Female</b>					<b>40% male</b>	
62	10.147	905988.2	453713	5.832	946546.6	646122	7.612	1099835	7.558		
63	11.471	896795.2	449109	6.677	941026.4	642354	8.650	1091463	8.595		
64	12.940	886508	443958	7.621	934743.1	638065	9.803	1082023	9.749		
65	14.535	875036.6	438213	8.636	927619.5	633202	11.049	1071415	10.996		
66	16.239	862318	431843	9.694	919608.5	627734	12.361	1059577	12.312		
67	18.034	848314.8	424831	10.764	910693.8	621649	13.715	1046479	13.672		
68	19.859	833016.3	417169	11.763	900891.1	614957	15.035	1032127	15.001		
69	21.729	816473.4	408885	12.709	890294	607724	16.337	1016608	16.317		
70	23.730	798732.3	400000	13.730	878979.2	600000	17.730	1000000	17.730		
71	25.951	779778.3	390508	14.953	866910.8	591762	19.325	982270	19.352		
72	28.481	759542.3	380374	16.506	853947.9	582913	21.235	963287	21.296		
73	31.201	737909.8	369540	18.344	839852.6	573292	23.383	942832	23.487		
74	34.051	714886.3	358010	20.381	824446.4	562775	25.696	920786	25.849		
75	37.211	690543.7	345820	22.686	807643.3	551305	28.285	897125	28.496		
76	40.858	664847.9	332952	25.325	789321.1	538799	31.258	871750	31.538		
77	45.171	637683.5	319348	28.366	769331.6	525153	34.721	844501	35.088		
78	50.211	608878.7	304923	31.727	747508.7	510257	38.641	815179	39.121		
79	55.861	578306.3	289612	35.362	723792.5	494068	42.937	783680	43.562		
80	62.027	546001.5	273434	39.396	698197.8	476597	47.646	750031	48.448		
81	68.615	512134.7	256474	43.952	670691.6	457821	52.807	714295	53.817		
82	75.532	476994.6	238876	49.153	641213.3	437699	58.467	676574	59.705		
83	82.510	440966.2	220833	54.857	609695.8	416184	64.443	637017	65.918		
84	89.613	404582.1	202612	60.979	576249.7	393354	70.714	595966	72.433		
85	97.240	368326.3	184455	67.738	541110.6	369367	77.564	553823	79.539		
86	105.792	332510.2	166519	75.347	504456.8	344347	85.271	510866	87.525		
87	115.671	297333.3	148903	84.023	466447.5	318402	94.107	467304	96.682		
88	126.980	262940.5	131679	93.820	427255.2	291649	104.135	423328	107.084		
89	139.452	229552.3	114958	104.594	387170.1	264286	115.160	379245	118.537		
90	152.931	197540.8	98927.1	116.265	346674.4	236643	127.074	335571	130.931		
91	167.260	167330.7	83798.1	128.751	306368.3	209130	139.767	292928	144.155		
92	182.281	139342.9	69782	141.973	266923.1	182204	153.135	251986	158.096		
93	198.392	113943.4	57062.1	155.931	229027.2	156336	167.285	213398	172.915		
94	215.700	91337.91	45741.4	170.677	193314.8	131959	182.266	177700	188.686		
95	233.606	71636.32	35875	186.213	160320.4	109436	197.914	145311	205.170		
96	251.510	54901.65	27494.4	202.538	130466.7	89057.8	214.090	116552	222.127		
97	268.815	41093.33	20579.3	219.655	104042.2	71020.2	230.700	91599.5	239.319		
98	285.277	30046.83	15047.3	237.713	81188.81	55420.3	247.870	70467.6	256.739		
99	301.298	21475.16	10754.6	256.712	61889.17	42246.2	265.759	53000.8	274.546		
100	317.238	15004.74	7514.28	276.427	46001.48	31401.1	284.307	38915.3	292.751		
101	333.461	10244.66	5130.46	296.629	33285.43	22721	303.414	27851.4	311.362		
102	350.330	6828.468	3419.65	317.093	23412.01	15981.3	322.951	19400.9	330.388		
103	368.542	4436.251	2221.65	338.505	15988.22	10913.7	343.585	13135.4	350.520		
104	387.855	2801.306	1402.88	361.016	10576.13	7219.37	365.383	8622.25	371.752		
105	407.224	1714.806	858.764	383.597	6757.977	4613.06	387.305	5471.83	393.048		
106	425.599	1016.496	509.054	405.217	4165.638	2843.51	408.312	3352.56	413.370		
107	441.935	583.8761	292.401	424.846	2477.65	1691.27	427.365	1983.67	431.682		
108	457.553	325.8408	163.179	444.368	1425.031	972.74	446.262	1135.92	449.642		
109	473.150	176.7514	88.516	464.469	791.7926	540.486	465.691	629.001	467.941		
110	486.745	93.12146	46.6346	482.325	424.0295	289.447	482.938	336.081	484.093		
111	496.356	47.79505	23.9355	495.110	219.5095	149.839	495.282	173.775	495.608		
112	500.000	24.07169	12.0549	500.000	110.8281	75.6524	500.000	87.7073	500.000		
113	500.000	12.03585	6.02747	500.000	55.41407	37.8262	500.000	43.8537	500.000		
114	500.000	6.017923	3.01374	500.000	27.70703	18.9131	500.000	21.9268	500.000		
115	500.000	3.008962	1.50687	500.000	13.85352	9.45655	500.000	10.9634	500.000		
116	500.000	1.504481	0.75343	500.000	6.926759	4.72827	500.000	5.48171	500.000		
117	500.000	0.752241	0.37672	500.000	3.46338	2.36414	500.000	2.74086	500.000		
118	500.000	0.376121	0.18836	500.000	1.73169	1.18207	500.000	1.37043	500.000		
119	500.000	0.188061	0.09418	500.000	0.865845	0.59103	499.999	0.68521	500.000		
120	#####	0.094031	0.04709	#####	0.432923	0.29552	#####	0.34261	1,000.000		

AGE 63 BEN AMT 100.000 RIDER1 Y HCBC 1.00 INCIDE  
SEX M L/NL L RIDER2 Y WP  
FY PREM 2,494.60 PAY PER LIFE RIDER3 Y COLA  
REN PREM 2,494.60 ELIM 90 RIDER4 N NF  
ISS YEAR 98 HCS AMT 100.000 RIDER5 N 3 YR  
BEN PER L HCBC  
RATING 1.00 HCBC WP Y  
SP N  
IOPAY N

CALCS

		NF	HCS			FAC BASE	HCBC	TOTAL										
		BEN	BEN															
YEAR		AMT	AMT	RATING	FAC	CLM CST	FACTOR	CLMCT	83GAM	INCIDENCE								
0	63	0.10	100.00	100.00	1.00		0.9400	51.19	1,000.00	0.0025		0.0000	0.00	0.00	0.00	0.011	92,452.90	
1	64	0.20	105.00	105.00	1.00		0.8400	119.34	924.53	0.0030		0.9946	0.0000	0.00	0.00	0.013	86,818.82	0.0609
2	65	0.40	110.25	110.25	1.00	1.9568		209.92	868.19	0.0035	0.9965	0.9911	0.0000	0.00	0.00	0.015	82,084.16	0.0545
3	66	0.60			1.00	2.2488	0.6900	329.18	820.84	0.0042	0.9958	0.9869	0.0000	0.00	0.00	0.016		0.0482
4		0.80	121.55	121.55	1.00	2.5843	0.6300	485.44		0.0050	0.9950	0.9820	0.0000	0.00	0.00	0.018		0.0530
5	68	1.00			1.00					0.0059	0.9941		0.0000	0.00	0.00	0.020		0.0549
6	69	1.00	134.01	134.01	1.00	3.4131	0.5100	674.58	699.23	0.0070	0.9930	0.9693	0.0000	0.00	0.00	0.022	65,956.06	0.0567
7	70	1.00	140.71	140.71	1.00	3.9224	0.4600	797.78	659.56	0.0084	0.9916	0.9612	0.0000	0.00	0.00	0.024	62,082.46	0.0587
8	71	1.00	147.75	147.75	1.00	4.5871	0.4200	963.71	620.82	0.0100	0.9900	0.9516	0.0000	0.00	0.00	0.026	58,298.47	0.0610
9	72	1.00	155.13	155.13	1.00	5.3646	0.4000	1,173.61	582.98	0.0119	0.9881	0.9403	0.0000	0.00	0.00	0.028	54,597.63	0.0635
10	73	1.00	162.89	162.89	1.00	6.2737	0.3700	1,423.12	545.98	0.0141	0.9859	0.9270	0.0000	0.00	0.00	0.031	50,983.21	0.0662
11	74	1.00	171.03	171.03	1.00	7.3370	0.3400	1,725.40	509.83	0.0168	0.9832	0.9115	0.0000	0.00	0.00	0.034	47,462.77	0.0691
12	75	1.00	179.59	179.59	1.00	8.5805	0.3100	2,091.55	474.63	0.0200	0.9800	0.8932	0.0000	0.00	0.00	0.037	44,035.44	0.0722
13	76	1.00	188.56	188.56	1.00	10.0347	0.2800	2,534.97	440.35	0.0238	0.9762	0.8720	0.0000	0.00	0.00	0.041	40,695.00	0.0759
14	77	1.00	197.99	197.99	1.00	11.7353	0.2600	3,083.52	406.95	0.0283	0.9717	0.8473	0.0000	0.00	0.00	0.045	37,432.44	0.0800
15	78	1.00	207.89	207.89	1.00	13.7242	0.2400	3,755.34	374.39	0.0334	0.9666	0.8190	0.0000	0.00	0.00	0.050	34,242.78	0.0800
16	79	1.00	218.29	218.29	1.00	16.0502	0.2300	4,590.79	344.44	0.0391	0.9609	0.7869	0.0000	0.00	0.00	0.056	31,131.45	0.0800
17	80	1.00	229.20	229.20	1.00	18.7703	0.2100	5,586.71	316.89	0.0454	0.9546	0.7512	0.0000	0.00	0.00	0.062	28,110.86	0.0800
18	81	1.00	240.66	240.66	1.00	20.4505	0.1900	6,333.30	291.54	0.0517	0.9483	0.7124	0.0000	0.00	0.00	0.069	25,198.15	0.0866
19	82	1.00	252.70	252.70	1.00	22.2811	0.1800	7,212.14	271.53	0.0584	0.9416	0.6707	0.0000	0.00	0.00	0.076	22,412.95	0.0755
20	83	1.00	265.33	265.33	1.00	24.2756	0.1600	8,174.92	251.02	0.0655	0.9345	0.6268	0.0000	0.00	0.00	0.083	19,779.20	0.0825
21	84	1.00	278.60	278.60	1.00	26.4486	0.1500	9,308.72	230.31	0.0727	0.9273	0.5813	0.0000	0.00	0.00	0.090	17,314.46	0.0896
22	85	1.00	292.53	292.53	1.00	28.8161	0.1400	10,599.55	209.67	0.0799	0.9201	0.5349	0.0000	0.00	0.00	0.097	15,024.79	0.0972
23	86	1.00	307.15	307.15	1.00	31.3955	0.1300	12,069.11	189.28	0.0871	0.9129	0.4883	0.0000	0.00	0.00	0.106	12,909.42	0.1058
24	87	1.00	322.51	322.51	1.00	34.2058	0.1200	13,742.10	169.26	0.0941	0.9059	0.4423	0.0000	0.00	0.00	0.116	10,964.35	0.1157
25	88	1.00	338.64	338.64	1.00	37.2677	0.1100	15,646.66	149.68	0.1007	0.8993	0.3978	0.0000	0.00	0.00	0.127	9,188.34	0.1270
26	89	1.00	355.57	355.57	1.00	40.6037	0.1000	17,814.78	130.67	0.1067	0.8933	0.3554	0.0000	0.00	0.00	0.139	7,585.42	0.1395
27	90	1.00	373.35	373.35	1.00	44.2382	0.0900	20,282.87	112.45	0.1131	0.8869	0.3152	0.0000	0.00	0.00	0.153	6,159.88	0.1529
28	91	1.00	392.01	392.01	1.00	46.1758	0.0900	22,229.77	95.25	0.1199	0.8801	0.2774	0.0000	0.00	0.00	0.167	4,913.98	0.1673
29	92	1.00	411.61	411.61	1.00	48.1981	0.0800	24,246.98	79.32	0.1271	0.8729	0.2421	0.0000	0.00	0.00	0.182	3,846.27	0.1823
30	93	1.00	432.19	432.19	1.00	50.3091	0.0700	26,446.62	64.86	0.1347	0.8653	0.2095	0.0000	0.00	0.00	0.198	2,948.58	0.1984
31	94	1.00	453.80	453.80	1.00	52.5125	0.0700	28,985.17	51.99	0.1428	0.8572	0.1796	0.0000	0.00	0.00	0.216	2,209.37	0.2157
32	95	1.00	476.49	476.49	1.00	54.8125	0.0700	31,767.38	40.78	0.1514	0.8486	0.1524	0.0000	0.00	0.00	0.234	1,615.92	0.2336
33	96	1.00	500.32	500.32	1.00	57.2131	0.0600	34,648.46	31.25	0.1604	0.8396	0.1280	0.0000	0.00	0.00	0.252	1,152.94	0.2515
34	97	1.00	525.33	525.33	1.00	59.7189	0.0600	37,974.28	23.39	0.1701	0.8299	0.1062	0.0000	0.00	0.00	0.269	802.66	0.2688
35	98	1.00	551.60	551.60	1.00	62.3345	0.0600	41,619.33	17.10	0.1803	0.8197	0.0871	0.0000	0.00	0.00	0.285	545.59	0.2853
36	99	1.00	579.18	579.18	1.00	65.0646	0.0600	45,614.27	12.22	0.1911	0.8089	0.0704	0.0000	0.00	0.00	0.301	362.11	0.3013
37	100	1.00	608.14	608.14	1.00	67.9142	0.0600	49,992.67	8.54	0.2026	0.7974	0.0562	0.0000	0.00	0.00	0.317	234.56	0.3172
38	101	1.00	638.55	638.55	1.00	69.3855	0.0600	53,629.51	5.83	0.2147	0.7853	0.0441	0.0000	0.00	0.00	0.333	148.13	0.3335
39	102	1.00	670.48	670.48	1.00	70.8887	0.0600	57,530.91	3.89	0.2276	0.7724	0.0341	0.0000	0.00	0.00	0.350	91.05	0.3503
40	103	1.00	704.00	704.00	1.00	72.4245	0.0600	61,716.13	2.53	0.2412	0.7588	0.0258	0.0000	0.00	0.00	0.369	54.31	0.3685
41	104	1.00	739.20	739.20	1.00	73.9933	0.0600	66,205.82	1.59	0.2557	0.7443	0.0192	0.0000	0.00	0.00	0.388	31.34	0.3879
42	105	1.00	776.16	776.16	1.00	75.5965	0.0600	71,022.11	0.98	0.2711	0.7289	0.0140	0.0000	0.00	0.00	0.407	17.48	0.4072
43	106	1.00	814.97	814.97	1.00	77.2342	0.0600	76,188.78	0.58	0.2873	0.7127	0.0100	0.0000	0.00	0.00	0.426	9.43	0.4256
44	107	1.00	855.72	855.72	1.00	78.9074	0.0600	81,731.32	0.33	0.3046	0.6954	0.0069	0.0000	0.00	0.00	0.442	4.93	0.4419
45	108	1.00	898.50	898.50	1.00	80.6169	0.0600	87,677.05	0.19	0.3228	0.6772	0.0047	0.0000	0.00	0.00	0.458	2.50	0.4576
46	109	1.00	943.43	943.43	1.00	82.3634	0.0600	94,055.33	0.10	0.3422	0.6578	0.0031	0.0000	0.00	0.00	0.473	1.23	0.4732
47	110	1.00	990.60	990.60	1.00	84.1477	0.0600	100,897.60	0.05	0.3627	0.6373	0.0020	0.0000	0.00	0.00	0.473	0.61	0.4732



## Massachusetts Mutual Life Insurance Company (MassMutual)

### Premium Sufficiency Analysis

Interest 5.00%  
Average benefit \$100

Issue Age	Gross Premium	Valuation Net Premium	Renewal Expenses	GP-NP-EX	Age Distribution
42	\$12.16	\$6.16	\$1.81	\$4.19	6.00%
47	\$12.18	\$7.15	\$1.91	\$3.12	9.00%
52	\$12.67	\$8.38	\$2.09	\$2.20	20.00%
57	\$15.04	\$10.01	\$2.52	\$2.51	29.00%
62	\$19.27	\$12.28	\$3.22	\$3.76	22.00%
67	\$26.10	\$15.45	\$4.33	\$6.33	10.00%
72	\$39.13	\$20.04	\$6.34	\$12.74	3.00%
77	\$62.23	\$26.21	\$9.84	\$26.18	1.00%
82	\$95.53	\$33.26	\$14.96	\$47.31	0.00%
Average	\$17.37	\$10.70	\$2.86	\$3.80	100.00%

## 1. Purpose and Scope

The purpose of this memorandum is to justify the premium rates for the proposed policy and rider forms. The proposed forms offer Long Term Care Insurance on a participating basis that is individually underwritten and issued. The proposed forms will replace the existing non-participating policy forms MM-400, et al. for the purposes of new business. The following is a list of the proposed forms being filed on a nationwide basis. Please note that a state specific suffix may be added to the forms listed below.

Item	Form Number
Comprehensive LTC Policy	MM500-P-VA
Enhanced Elimination Period Rider	MM500R-EEP
Home and Community Based Services Waiver of Elimination Period Rider	MM500R-WOE
Home and Community Based Services Monthly Benefit Rider	MM500R-MTH
Indemnity Benefit Rider	MM500R-IND-1-VA
Compound Inflation Protection Rider	MM500R-CIP
Simple Inflation Protection Rider	MM500R-SIP
Restoration of Benefits Rider	MM500R-ROB
Shortened Benefit Period Nonforfeiture Rider	MM500R-SBN-VA
Return of Premium on Death Rider	MM500R-ROP
Full Return of Premium on Death Rider	MM500R-FROP
Waiver of Premium for Covered Partner	MM500R-WOP
Paid-Up Survivor Benefit Rider	MM500R-SVR
Shared Care Rider	MM500R-SCB
10-Year Premium Payment Endorsement	MME-10P
Paid – Up at 65 Premium Option Endorsement	MME-P65
Discounted Renewal Premium Payment Endorsement	n/a

## 2. **Benefit Description**

These forms provide Long Term Care Insurance that is intended to comply with Internal Revenue Code Section 7702B(b), and are therefore intended to qualify for the tax treatment enacted as a part of the 1996 HealthCare Reform legislation.

### Comprehensive Policy:

This policy provides daily reimbursement of the costs associated with qualified long term care services provided in a facility or community based setting pursuant to a plan of care, up to a specified daily benefit amount. The total of all benefits paid under the policy is subject to a specified total benefit amount that is administered as a "pool of money"

### Benefit Amounts:

The Daily Benefit Amount at issue is subject to a minimum of \$50 and may be purchased in \$10 increments.

The total benefit options available are 730, 1095, 1460, 1825, 2190, 3650 times the daily benefit amount as well as an option for an unlimited total benefit amount.

### Elimination Period:

To receive benefits for services provided within the U.S., its territories and possessions, and Canada a chronically ill insured must satisfy the policy elimination period. The elimination period options are 30, 60, 90, and 180 service days. This requirement need only be satisfied once during the lifetime of the policy. Service days used to satisfy this requirement may be accumulated from separate claims. This requirement may also be satisfied by the receipt of services outside of the United States, its territories or possessions and Canada.

To receive benefits for services provided outside of the U.S., its territories and possessions, and Canada a chronically ill individual must first satisfy the policy's elimination period and then satisfy an additional per occurrence elimination period. The elimination period for coverage outside of the United States is equal to the policy elimination period.

### Other Policy Benefits:

Facility Prescription Drug Benefit – pays up to 1 times the DBA per month for prescriptions drugs while confined in a facility

Facility Bed Reservation Benefit – pays up to 60 times the DBA per policy year for facility bed reservation

Respite Care Benefit – pays up to 30 times the DBA per policy year for respite care.

#### Supportive Benefits

Emergency Response Benefit – pays up to ½ times the DBA per month for an emergency response system

Ambulance Benefit – pays up to 4 times the DBA per policy year for ambulance services to/from a facility from/to a community based care setting.

- Caregiver Training Benefit – pays up to 5 times the DBA during the life of the policy for training of an informal caregiver
- Alternate Plan of Care Benefit – flexible benefit designed to entertain alternative care options.
- Personal Care Advisor Benefit – Optional Benefit meant to assist the insured during the claim process. Does not count against the total benefit amount
- Coverage Outside of the United States – provides benefits for services provided outside the US, its territories or possessions, and Canada. The daily benefit is 50% of DBA. The maximum amount that may be received under this benefit is limited to 25% of the policy's total benefit amount. If the policy has an unlimited benefit amount then the maximum for this benefit is 3,650 times the DBA times 50%.
- Waiver of Premium – waives the policy premium after satisfaction of the elimination period and while benefits are being paid.
- Contingent Non-Forfeiture – provides a non-forfeiture benefit in the event that an insured lapses their coverage as a result of a substantial increase in the policy premium

#### Benefit Riders

- Enhanced Elimination Period – changes to the administration of the elimination period from service day to 1-in-7. One or more days of service during a calendar week counts as 7 days towards satisfaction of the elimination period.
- Home and Community Based Services Waiver of Elimination Period – waives the requirement to satisfy the elimination period in order to receive home and community based services. Home and community based service days that are reimbursed under this rider will count towards satisfaction of the policy elimination period.
- Home and Community Based Services Monthly Benefit – changes the daily benefit amount to a monthly benefit amount
- Indemnity Benefit – pays the lesser of the DBA and the IRS Per Diem Limit regardless of the actual cost of services received each day. Services must be received in order to receive the benefit. Actual costs above the per diem limit but less than the DBA continue to be reimbursable upon proof of loss.
- Compound Inflation Protection – inflates the DBA by 5% each year. All other benefit amounts are increased in proportion to the increase in the DBA.
- Simple Inflation Protection – inflates the DBA by 5% of the original DBA each year. All other benefit amounts are increased in proportion to the DBA.
- Restoration of Benefits – if the insured recovers prior to exhausting the total benefit amount the total benefit amount will be restored to the level it would have been if benefits had not been paid. Benefits may be restored more than once. However, the total amount that can be restored over the life of the policy is an amount equivalent to the original total benefit of the policy.

Shortened Benefit Period Nonforfeiture – NAIC Shortened Benefit Period  
Return of Premium on Death – if the insured dies while the policy is in force  
all premiums paid for the policy less any claims paid under the policy  
will be returned to insured's beneficiary

Full Return of Premium on Death – if the insured dies while the policy is in  
force all premiums paid for the policy will be returned to the insured's  
beneficiary.

Waiver of Premium for Covered Partner – waives the policy premium when  
the covered partner's premium is waived on their policy.

Paid-Up Survivor – if the insured's covered partner dies the insured's policy  
will be paid-up on the later of the 10<sup>th</sup> policy anniversary or the date of  
the covered partner's death.

Shared Care – establishes a third benefit pool that is available to the insured  
and their covered partner once they have exhausted the total benefit  
amount of their policy

### Premium Payment Options

10-Year Premium Payment – policy is paid-up on the 10th policy anniversary

Paid-Up at Age 65 – policy is paid-up on when the insured attained age 65  
(not available above age 55).

Discounted Renewal Premiums – Insured agrees to pay a higher 1<sup>st</sup> year  
premium in return for discounted renewal premiums.

### Dividends

The policy is intended to be participating policy. Explicit dividend margin has  
been incorporated into the morbidity assumption used to develop the  
premium rates for this product. The dividend margin will be released as  
policy experience emerges. Therefore the dividend pattern is expected to  
follow the pattern of expected paid claims for these policies. As a result the  
company does not intend to credit a dividend until the later of the 10<sup>th</sup> Policy  
anniversary and the anniversary after the year in which the insured attains  
age 65. Dividends will be used to reduce future premiums. If a policy is not  
in premium paying status the dividends will be used to increase future  
benefits.

### 3. Renewability

The proposed forms are guaranteed renewable for life of the insured.

### 4. Applicability

The rates are being filed on a nationwide basis and will be marketed to new  
policyholders upon approval and when made available in your state.

### 5. Morbidity

The basis of the morbidity assumptions were those used in the development of the company's currently approved policy form (MM-400, et al.). Modified based on the experience provided by our reinsurance carrier. Sample claim costs are provided in Exhibit 4.

## 6. Mortality

Mortality is equal to:

- 80% of Annuity 2000 for active lives plus underwriting selection
- Disabled Life Mortality is assumed to be the lesser of the claim termination rate and a multiple of the active life mortality rate. The multiple varies by claim termination age as follows:
  - For claim termination ages  $\leq 75$  the multiple is 20
  - For claim termination ages  $\geq 90$  the multiple is 5
  - The multiple grades linearly from 75 to 90

## 7. Lapse Rates

Policy Year	Premiums Payable for Life of Policy	Paid-Up Premium
1	3.50%	3.50%
2	2.75%	0.00%
3	2.00%	0.00%
4	1.50%	0.00%
5	1.00%	0.00%
6	0.75%	0.00%
7+	0.65%	0.00%

## 8. Expenses

Sales Expenses:

Policy Year	Percent of Premium			
	Base Premium		Excess Premium	
	Other Sales Expense	Writing Agent Commission	Other Sales Expense	Writing Agent Commission
1	77.35%	50%	12.71%	6%
2	7.86%	6%	6.80%	6%
3	4.16%	6%	4.16%	6%
4 to 10	2.41%	6%	2.41%	6%
11+	1.11%	1%	1.11%	1%

Base Premium is the level premium for the life of the policy associated with the base policy and all riders except for the non-forfeiture rider, both return of premium riders, and the paid-up survivorship rider.

Excess Premium is the premium associated with premium payment options other than level premium for the life of the policy and premium for the non-forfeiture, both return of premium, and the paid-up survivorship riders.

Other Expenses:

	Other Percent of Premium*		Other Per Policy		Percent of Paid Claims
Issue Age	Year 1	Year 2+	Year 1	Year 2+	All Yrs.
< 40	19.25%	8%	\$625	\$60	5%
40 to 44	19.25%	8%	\$625	\$60	5%
45 to 49	19.25%	8%	\$635	\$60	5%
50 to 54	19.25%	8%	\$635	\$60	5%
55 to 59	19.25%	8%	\$650	\$60	5%
60 to 69	19.25%	8%	\$660	\$60	5%
65 to 69	19.25%	8%	\$780	\$60	5%
70 to 74	19.25%	8%	\$1,140	\$60	5%
75 to 79	19.25%	8%	\$1,630	\$60	5%
>80	19.25%	8%	\$3,810	\$60	5%

\* includes premium tax

## 9. Marketing Method

These forms are intended to be sold through the company's career agency system. This include company career agents and independent brokers contracting through one of the company's general agencies

## 10. Underwriting

All applicants are required to submit an application containing a medical history questionnaire. For applicants less than 70 years old the company will perform a phone health interview. The phone health interview includes a cognitive screen for applicants aged 65 and older. For applicants aged 70 and above the company will perform a face to face interview including a cognitive screen. The company will request an attending physician statement for all applicants. Additional tests including a paramedical exam may be ordered at the underwriter's discretion.

## 11. Premium Classes

The company has 5 underwriting classes:

Underwriting Class	Rate Level	Proportion of Business
Ultra Preferred	85% of the Base Rate	60%
Select Preferred	100% of the Base Rate	30%

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Actuarial Memorandum

Preferred	125% of the Base Rate	10%
Standard Plus	250% of the Base Rate	<0.5%
Standard	500% of the Base Rate	<0.5%

Other Discounts Available:

- 35% Spouse/Partner Discount - Both spouses/partners must be covered.
- 5% Spouse/Partner Discount – One spouse/partner is covered.
- 10% Multi-Life Discount – members of an employer group or association
- 5% Multi-Product Discount – owns another company protection product

A table of Base Premium Rates and Premium factors is attached as Exhibit 1.

12. Issue Age Range

The issue ages are from 18 to 84

13. Area Factors

Area factors were not used in the pricing of these policy forms.

14. Average Annual Premium and Average Issue Age

The estimated average annual premium is \$3,500.

The estimated average issue age 55.5.

15. Modal Premium Rules:

Premium Mode	Factor
Annual	1.00
Semi-Annual	0.52
Quarterly	0.27
Monthly PAC	0.088

16. Trend Assumptions

The pricing assumes that the inflation rate for qualified long term care services is 5% per year.

17. Minimum Required Loss Ratio

This is the initial filing for premium rates for these policy forms. Therefore the minimum loss ratio requirement does not apply.

18. Contract Reserves

Methodology: 1 Year Full Preliminary Term



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Assumptions:

Morbidity: Pricing Morbidity plus margin for moderately adverse experience plus dividend margin.

Mortality: 80% of Annuity 2000 plus selection for active lives. Disabled Life Mortality is assumed to be the lesser of the claim termination rate and a multiple of the active life mortality rate. The multiple varies by claim termination age as follows:

For claim termination ages  $\leq 75$  the multiple is 20

For claim termination ages  $\geq 90$  the multiple is 5

The multiple grades linearly from 75 to 90

Voluntary Lapse: The lesser of 80% of the pricing lapse rate and

6% in policy year 1

4% on policy years 2 to 4

2% in policy years 5+

Valuation Interest Rate: The whole life valuation interest rate for the year in which the policy was issued (currently 4.00%).

19. Distribution of Business

Issue Age Distribution	
Issue Age Range	Percent of Policies Issued
<40	3%
40 to 44	6%
45 to 49	11%
50 to 54	24%
55 to 59	28%
60 to 64	17%
65 to 69	7%
70 to 74	2%
75 to 79	1%
80 to 84	1%

Partner Discount Distribution	
Partner Status	Percent of Policies Issued
Single	10%
Partner – One Policy	20%
Partner – Two Policies	70%

Underwriting Class Distribution	
Underwriting Class	Percent of Policies Issued
Ultra Preferred	60%
Select Preferred	30%
Preferred	10%
Standard Plus	<0.5%
Standard	<0.5%

Elimination Period Distribution
---------------------------------

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Elimination Period	Percent of Policies Issued
30 Day	8%
60 Day	8%
90 Day	76%
180 Day	8%

Total Benefit Amount Distribution	
Total Benefit Amount	Percent of Policies Issued
730 times the DBA	5%
1,095 times the DBA	5%
1,460 times the DBA	5%
1,825 times the DBA	5%
2,190 times the DBA	5%
3,650 times the DBA	5%
Unlimited	70%

Inflation Protection Option Distribution	
Inflation Protection Option	Percent of Policies Issued
None	13%
Simple	35%
Compound	52%

Premium Payment Option Distribution	
Premium Payment Option	Percent of Policies Issued
Life of the Policy	85%
10 Year	14%
To Age 65	1%

Rider Take Rates	
Rider	Percent of Policies
Indemnity	45%
Monthly Benefit	10%
Enhanced EP	25%
Waiver of EP for HCBS	5%
Full Return of Premium	1%
Return of Premium Less Claims	5%
Non-Forfeiture	1%
Shared Care	10%
Joint Waiver of Premium	50%
Paid-Up Survivorship	1%

## 20. Contingency and Risk Margins

The premium rates produce the company's minimum target rate of return on allocated capital based on pricing assumptions, which include margin for moderately adverse deviation.

The premium rates can withstand any one of the following moderately adverse experience scenarios:

- a. Claim incidence rates equal to 115% of best estimate claim incidence rates
- b. Voluntary lapse rates equal to 0% in all policy years
- c. Active and disabled life mortality rates equal to 60% of the active and disabled life mortality rates used in pricing

#### 21. Proposed Effective Date

The policy forms are being filed on a nationwide basis and will be marketed when a sufficient number of states have approved the forms, rates, and advertising to allow for an efficient product roll-out.

**Actuarial Certification**

I, Kevin B. Waterman, FSA, MAAA, am a member of the American Academy of Actuaries. I meet the Academy's qualification standards for rendering this opinion and am familiar with the requirements for filing long term care insurance premiums.

In my opinion the initial premium rate schedule is sufficient to cover anticipated costs under moderately adverse experience and the premium rate schedule is reasonably expected to be sustainable over the life of the form with no future premium increases anticipated.

I have reviewed and taken into consideration the policy design and coverage provided.

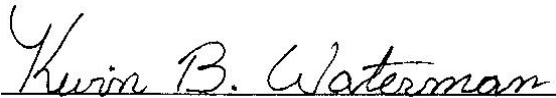
I have reviewed and taken into consideration the company's current underwriting and claims adjudication processes.

The premium rate schedule is not less than the premium rate schedule for currently marketed policy forms. A premium comparison is attached as Exhibit 2.

The assumptions used for reserves contain reasonable margins for adverse experience.

The net valuation premium for renewal years does not increase.

The difference between the gross premium and the net valuation premium for renewal years is sufficient to cover the expected renewal expenses. A demonstration is attached as Exhibit 3.



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AVP & Actuary  
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Exhibit 1  
Massachusetts Mutual Life Insurance Company  
Premium Rates and Factors  
MM-500

Annual Base Rates per \$10 of Daily Benefit Amount			Premium Factors													
Issue Age		Comprehensive	Inflation Protection			10 Year Paid Up			Paid Up at 65			Non Forfeiture	Return of Premium		Joint Waiver	Paid-Up Survivor
			None	Simple	Compound	No Inflation	Simple	Compound	No Inflation	Simple	Compound		Less Claims	Full		
18 to 39		89.20	1.000	1.659	2.610	NA	NA	NA	NA	NA	NA	1.322	1.250	1.470	1.020	1.086
40		89.20	1.000	1.659	2.610	2.916	3.030	3.170	1.580	1.645	1.715	1.322	1.250	1.470	1.020	1.086
41		89.80	1.000	1.666	2.604	2.897	3.008	3.143	1.595	1.660	1.730	1.316	1.240	1.490	1.020	1.088
42		90.40	1.000	1.673	2.598	2.878	2.987	3.116	1.610	1.675	1.745	1.310	1.255	1.510	1.020	1.090
43		91.00	1.000	1.680	2.593	2.859	2.966	3.090	1.650	1.715	1.784	1.302	1.272	1.543	1.020	1.094
44		91.70	1.000	1.687	2.587	2.840	2.945	3.063	1.690	1.755	1.823	1.294	1.289	1.576	1.020	1.098
45		92.30	1.000	1.695	2.581	2.821	2.924	3.037	1.730	1.795	1.862	1.286	1.306	1.609	1.020	1.102
46		93.00	1.000	1.702	2.576	2.803	2.903	3.011	1.770	1.835	1.901	1.278	1.323	1.642	1.020	1.106
47		93.60	1.000	1.709	2.570	2.785	2.883	2.985	1.810	1.875	1.940	1.270	1.340	1.675	1.020	1.110
48		94.30	1.000	1.716	2.564	2.766	2.863	2.960	1.886	1.952	2.017	1.260	1.360	1.729	1.020	1.116
49		94.90	1.000	1.724	2.558	2.748	2.842	2.934	1.962	2.029	2.094	1.250	1.380	1.783	1.020	1.122
50		95.60	1.000	1.731	2.553	2.730	2.822	2.909	2.038	2.106	2.171	1.240	1.400	1.837	1.020	1.128
51		97.40	1.000	1.744	2.528	2.700	2.789	2.871	2.114	2.183	2.248	1.230	1.420	1.891	1.020	1.134
52		99.20	1.000	1.758	2.504	2.671	2.755	2.833	2.190	2.260	2.325	1.220	1.440	1.945	1.020	1.140
53		101.10	1.000	1.772	2.480	2.642	2.722	2.795	2.321	2.392	2.458	1.212	1.468	2.034	1.020	1.145
54		102.90	1.000	1.785	2.457	2.614	2.690	2.759	2.453	2.525	2.590	1.204	1.496	2.123	1.020	1.150
55		104.90	1.000	1.799	2.433	2.585	2.658	2.722	2.585	2.658	2.722	1.196	1.524	2.212	1.020	1.155
56		111.80	1.000	1.793	2.390	2.521	2.590	2.651	NA	NA	NA	1.188	1.552	2.301	1.020	1.160
57		119.30	1.000	1.787	2.348	2.458	2.524	2.582	NA	NA	NA	1.180	1.580	2.390	1.020	1.165
58		127.20	1.000	1.782	2.306	2.397	2.459	2.515	NA	NA	NA	1.172	1.617	2.551	1.020	1.171
59		135.60	1.000	1.776	2.265	2.338	2.396	2.450	NA	NA	NA	1.164	1.654	2.712	1.020	1.177
60		144.60	1.000	1.770	2.225	2.280	2.335	2.386	NA	NA	NA	1.156	1.691	2.873	1.021	1.183
61		156.00	1.000	1.746	2.176	2.217	2.269	2.317	NA	NA	NA	1.148	1.728	3.034	1.023	1.189
62		168.30	1.000	1.722	2.128	2.155	2.206	2.250	NA	NA	NA	1.140	1.765	3.195	1.025	1.195
63		181.60	1.000	1.699	2.081	2.096	2.144	2.184	NA	NA	NA	1.134	1.817	3.569	1.028	1.200
64		195.80	1.000	1.676	2.035	2.038	2.083	2.121	NA	NA	NA	1.128	1.869	3.943	1.031	1.205
65		211.30	1.000	1.653	1.990	1.981	2.025	2.059	NA	NA	NA	1.122	1.921	4.317	1.034	1.210
66		233.20	1.000	1.634	1.939	1.917	1.958	1.990	NA	NA	NA	1.116	1.973	NA	1.037	1.215
67		257.40	1.000	1.614	1.889	1.855	1.893	1.923	NA	NA	NA	1.110	2.025	NA	1.040	1.220
68		284.10	1.000	1.595	1.841	1.794	1.831	1.859	NA	NA	NA	1.104	2.101	NA	1.046	1.222
69		313.60	1.000	1.576	1.794	1.736	1.770	1.796	NA	NA	NA	1.098	2.177	NA	1.052	1.224
70		346.10	1.000	1.558	1.748	1.680	1.712	1.736	NA	NA	NA	1.092	2.253	NA	1.058	1.226
71		386.00	1.000	1.545	1.712	1.629	1.659	1.682	NA	NA	NA	1.086	2.329	NA	1.064	1.228
72		430.60	1.000	1.532	1.677	1.580	1.607	1.629	NA	NA	NA	1.080	2.405	NA	1.070	1.230
73		480.20	1.000	1.519	1.643	1.532	1.557	1.578	NA	NA	NA	1.076	2.521	NA	1.078	1.230
74		535.70	1.000	1.506	1.609	1.486	1.509	1.529	NA	NA	NA	1.072	2.637	NA	1.086	1.230
75		597.50	1.000	1.493	1.576	1.441	1.462	1.482	NA	NA	NA	1.068	2.753	NA	1.094	1.230
76		640.90	1.000	1.488	1.561	1.421	1.440	1.457	NA	NA	NA	1.064	2.869	NA	1.102	1.230
77		687.60	1.000	1.483	1.547	1.401	1.418	1.432	NA	NA	NA	1.060	2.985	NA	1.110	1.230
78		737.60	1.000	1.478	1.533	1.382	1.396	1.408	NA	NA	NA	1.058	3.170	NA	1.119	1.230
79		791.30	1.000	1.472	1.519	1.362	1.375	1.385	NA	NA	NA	1.056	3.355	NA	1.128	1.230
80		848.80	1.000	1.467	1.505	1.343	1.354	1.361	NA	NA	NA	1.054	3.541	NA	1.137	1.230
81		894.00	1.000	1.464	1.497	1.333	1.341	1.347	NA	NA	NA	1.052	3.726	NA	1.146	1.230
82		941.60	1.000	1.461	1.490	1.322	1.329	1.333	NA	NA	NA	1.050	3.911	NA	1.155	1.230
83		991.80	1.000	1.459	1.482	1.311	1.317	1.319	NA	NA	NA	1.049	4.361	NA	1.167	1.230
84		1044.60	1.000	1.456	1.474	1.301	1.305	1.305	NA	NA	NA	1.048	4.811	NA	1.179	1.230

Discounts	
Spouse Discount	35%
Married Discount	5%
Multi-Life Discount	10%
Multi-Product Discount	5%

Underwriting Rate Classes	
Ultra Preferred	0.850
Select Preferred	1.000
Preferred	1.250
Standard Plus	2.500
Standard	5.000

Discounted Renewal Premium Factors	
First Year Premium	3.650
Renewal Year Premium	0.750

Modal Factors	
Annual	1.000
Semi-Annual	0.520
Quarterly	0.270
Monthly-PAC	0.088

Elimination Period	Premium Factor	HCBS EP Waiver	Enhanced EP
30 Day	1.200	1.110	1.025
60 Day	1.100	1.180	1.045
90 Day	1.000	1.250	1.060
180 Day	0.880	1.320	1.080

Monthly HCBS Rider			1.100
Indemnity Rider			1.200

Benefit Period	Premium Factor	Shared Care	Restoration of Benefits
Lifetime	1.000	1.000	1.000
10 Year	0.900	1.090	1.025
6 Year	0.760	1.200	1.055
5 Year	0.680	1.280	1.085
4 Year	0.600	1.370	1.095
3 Year	0.520	1.390	1.095
2 Year	0.440	1.310	1.095

Exhibit 2  
Massachusetts Mutual Life Insurance Company  
Premium Rate Comparison

Policy Form MM-500 Annual Premium Rate per \$10 DBA Ultra Preferred Rate Class 90 Day Enhanced Elimination Period						
No Inflation protection				Compound Inflation protection		
Issue Age	Benefit Period			Benefit Period		
	3 Year	5 Year	Lifetime	3 Year	5 Year	Lifetime
45	\$43.24	\$56.55	\$83.16	\$111.61	\$145.96	\$214.64
55	\$49.15	\$64.27	\$94.51	\$119.58	\$156.37	\$229.95
65	\$99.00	\$129.46	\$190.38	\$197.01	\$257.62	\$378.86
75	\$279.94	\$366.08	\$538.35	\$441.19	\$576.94	\$848.44

Policy Form MM-400 Annual Premium Rate Ultra Preferred Rate Class 90 Day Elimination Period						
No Inflation protection				Compound Inflation protection		
Issue Age	Benefit Period			Benefit Period		
	3 Year	5 Year	Lifetime	3 Year	5 Year	Lifetime
45	\$29.48	\$39.78	\$46.80	\$95.82	\$129.29	\$152.10
55	\$42.57	\$57.44	\$67.58	\$106.43	\$143.60	\$168.94
65	\$84.20	\$113.60	\$133.65	\$168.40	\$227.21	\$267.30
75	\$233.89	\$315.56	\$371.25	\$374.22	\$504.90	\$594.00

Ratio of MM-500 to MM-400						
No Inflation protection				Compound Inflation protection		
Issue Age	Benefit Period			Benefit Period		
	3 Year	5 Year	Lifetime	3 Year	5 Year	Lifetime
45	146.67%	142.16%	177.70%	116.48%	112.90%	141.12%
55	115.45%	111.89%	139.87%	112.35%	108.89%	136.12%
65	117.58%	113.96%	142.45%	116.99%	113.39%	141.74%
75	119.69%	116.01%	145.01%	117.89%	114.27%	142.83%

Exhibit 3  
Actuarial Present Value of Renewal Year Gross Premium, Valuation Premium, and Expenses  
(Actuarial Present Value based on NAIC Minimum Statutory Reserve Assumptions)

Individual Sale  
Daily Reimbursement Policy  
Service Day Elimination Period  
Blended Gender and Underwriting Risk Class  
\$150 Daily Benefit Amount  
90 Day Elimination Period

Issue Age	3 Year Benefit Period												Issue Age
	No Inflation				Simple Inflation				Compound Inflation				
	Gross Premium	Valuation Premium	Expenses	Gross to Net	Gross Premium	Valuation Premium	Expenses	Gross to Net	Gross Premium	Valuation Premium	Expenses	Gross to Net	
42	11,005	3,387	2,631	4,986	18,517	7,406	3,825	7,287	28,743	16,511	5,629	6,603	42
47	10,637	4,199	2,590	3,848	18,296	8,580	3,833	5,883	27,498	16,854	5,475	5,169	47
52	10,621	5,047	2,588	2,987	18,834	9,546	3,930	5,358	26,806	16,542	5,362	4,902	52
57	11,692	5,982	2,737	2,973	21,131	10,440	4,272	6,419	27,742	16,101	5,474	6,167	57
62	14,589	7,222	3,172	4,195	25,419	11,562	4,935	8,921	31,478	16,055	6,025	9,398	62
67	19,351	8,587	3,930	6,833	31,796	12,586	5,965	13,245	37,210	15,947	6,934	14,330	67
72	26,862	10,157	5,204	11,500	42,067	13,657	7,707	20,703	46,054	16,064	8,442	21,548	72
77	34,078	11,829	6,565	15,684	52,218	14,609	9,601	28,009	54,328	16,229	10,022	28,077	77

Issue Age	6 Year Benefit Period												Issue Age
	No Inflation								Compound Inflation				
	Gross Premium	Valuation Premium	Expenses	Gross to Net	Gross Premium	Valuation Premium	Expenses	Gross to Net	Gross Premium	Valuation Premium	Expenses	Gross to Net	
42	16,039	5,363	3,395	7,281	27,000	11,472	5,148	10,380	41,910	24,591	7,772	9,548	42
47	15,488	6,584	3,358	5,546	26,656	13,150	5,179	8,327	40,063	25,013	7,563	7,486	47
52	15,446	7,831	3,384	4,231	27,411	14,481	5,344	7,586	39,014	24,483	7,422	7,109	52
57	16,975	9,136	3,633	4,206	30,714	15,650	5,870	9,194	40,322	23,726	7,610	8,985	57
62	21,132	10,831	4,295	6,006	36,871	17,127	6,857	12,887	45,660	23,520	8,435	13,705	62
67	27,932	12,653	5,421	9,858	45,990	18,448	8,375	19,167	53,821	23,218	9,775	20,828	67
72	38,586	14,698	7,275	16,612	60,599	19,789	10,905	29,904	66,342	23,196	11,964	31,181	72
77	48,628	16,827	9,219	22,582	74,813	20,921	13,614	40,279	77,836	23,219	14,219	40,399	77

Issue Age	Lifetime Year Benefit Period												Issue Age
	No Inflation								Compound Inflation				
	Gross Premium	Valuation Premium	Expenses	Gross to Net	Gross Premium	Valuation Premium	Expenses	Gross to Net	Gross Premium	Valuation Premium	Expenses	Gross to Net	
42	21,058	8,109	4,197	8,752	35,458	16,401	6,513	12,544	55,039	33,477	9,952	11,610	42
47	20,308	9,718	4,162	6,427	34,968	18,415	6,557	9,996	52,554	33,836	9,679	9,038	47
52	20,213	11,178	4,206	4,830	35,899	19,837	6,773	9,289	51,095	32,848	9,492	8,755	52
57	22,156	12,544	4,534	5,078	40,135	20,951	7,457	11,727	52,691	31,473	9,734	11,484	57
62	27,474	14,388	5,395	7,691	48,024	22,481	8,739	16,803	59,471	30,829	10,800	17,842	62
67	36,108	16,367	6,849	12,892	59,615	23,823	10,699	25,093	69,766	30,090	12,524	27,152	67
72	49,479	18,588	9,214	21,678	78,024	25,188	13,935	38,900	85,418	29,721	15,313	40,385	72
77	61,690	20,894	11,627	29,170	95,474	26,309	17,326	51,839	99,331	29,442	18,112	51,777	77

Exhibit 4  
Sample Pricing Claim Costs per \$1 of DBA  
Comprehensive, No Inflation Protection, Lifetime Benefit Period, 90 Day Elimination Period

Att Age	Issue Age							
	42	47	52	57	62	67	72	77
42	0.27							
43	0.33							
44	0.41							
45	0.51							
46	0.62							
47	0.74	0.46						
48	0.83	0.56						
49	0.93	0.68						
50	1.04	0.82						
51	1.16	0.99						
52	1.31	1.19	0.74					
53	1.45	1.33	0.90					
54	1.62	1.48	1.09					
55	1.78	1.64	1.29					
56	1.97	1.82	1.54					
57	2.17	2.03	1.83	1.14				
58	2.16	2.04	1.85	1.26				
59	2.12	2.03	1.85	1.37				
60	2.08	2.02	1.85	1.48				
61	2.15	2.11	1.96	1.67				
62	2.26	2.24	2.10	1.91	1.21			
63	2.53	2.52	2.39	2.19	1.52			
64	2.76	2.76	2.66	2.45	1.85			
65	3.02	3.02	2.93	2.72	2.20			
66	3.36	3.36	3.30	3.08	2.68			
67	3.75	3.75	3.72	3.50	3.26	2.11		
68	4.02	4.02	4.01	3.82	3.56	2.53		
69	4.29	4.29	4.29	4.14	3.89	3.00		
70	4.61	4.61	4.61	4.51	4.26	3.55		
71	5.11	5.11	5.11	5.04	4.80	4.28		
72	5.80	5.80	5.80	5.76	5.51	5.24	3.48	
73	6.38	6.38	6.38	6.37	6.14	5.85	4.24	
74	6.99	6.99	6.99	6.99	6.80	6.51	5.12	
75	7.62	7.62	7.62	7.62	7.48	7.18	6.09	
76	8.31	8.31	8.31	8.31	8.23	7.94	7.22	
77	9.19	9.19	9.19	9.19	9.14	8.86	8.58	5.79
78	10.89	10.89	10.89	10.89	10.88	10.60	10.29	7.58
79	13.09	13.09	13.09	13.09	13.09	12.83	12.45	9.93

[illegible]



Exhibit 5  
Model Office Projection per Policy Issued  
Earned Premium, Incurred Claims, Policy Reserve

Policy Duration	Paid Premium	Incurred Claims	Policy Reserve
0	3,000.64	83.48	0.00
1	2,883.58	98.14	1,989.64
2	2,811.25	115.25	3,984.32
3	2,754.07	135.08	5,994.68
4	2,705.39	161.85	8,022.72
5	2,664.22	195.39	10,066.45
6	2,625.73	219.75	12,138.45
7	2,587.36	246.35	14,236.24
8	2,547.04	275.05	16,357.32
9	2,504.55	310.83	18,493.16
10	1,754.79	354.01	20,112.15
11	1,713.44	401.52	21,713.34
12	1,670.21	455.03	23,288.07
13	1,613.58	513.12	24,820.21
14	1,566.49	574.97	26,311.30
15	1,517.48	648.91	27,744.65
16	1,466.59	731.81	29,106.54
17	1,413.84	828.01	30,377.74
18	1,354.08	932.02	31,540.40
19	1,297.88	1,026.56	32,604.48
20	1,240.16	1,136.46	33,547.51
21	1,181.13	1,259.30	34,348.86
22	1,121.04	1,404.25	34,976.63
23	1,057.47	1,558.51	35,410.01
24	995.99	1,678.49	35,683.74
25	934.18	1,810.04	35,777.84
26	872.42	1,939.98	35,686.60
27	811.17	2,092.83	35,375.83
28	749.59	2,249.85	34,830.16
29	690.47	2,351.58	34,107.87
30	632.64	2,450.86	33,205.06
31	576.58	2,521.29	32,147.96
32	522.73	2,604.44	30,915.67
33	471.46	2,682.27	29,506.98
34	423.05	2,694.40	27,995.42
35	377.33	2,688.42	26,398.26
36	334.52	2,650.71	24,749.25
37	294.83	2,620.68	23,037.97
38	258.38	2,584.30	21,269.74
39	225.29	2,481.88	19,523.59

Policy Duration	Paid Premium	Incurred Claims	Policy Reserve
40	195.21	2,366.28	17,816.20
41	168.09	2,233.21	16,170.02
42	143.83	2,113.08	14,573.78
43	122.35	1,995.91	13,027.54
44	103.52	1,841.46	11,579.89
45	87.05	1,693.44	10,228.29
46	72.74	1,540.51	8,982.67
47	60.41	1,402.88	7,830.80
48	49.85	1,275.26	6,766.45
49	40.91	1,138.86	5,805.86
50	33.34	1,012.68	4,942.28
51	26.98	892.43	4,173.04
52	21.66	785.97	3,486.87
53	17.27	690.42	2,875.52
54	13.67	592.43	2,346.47
55	10.72	503.70	1,892.93
56	8.33	422.99	1,509.00
57	6.40	352.88	1,185.89
58	4.86	291.45	916.83
59	3.65	234.66	699.11
60	2.70	187.68	523.98
61	1.97	147.59	385.36
62	1.42	114.15	277.45
63	1.00	86.60	195.19
64	0.70	64.24	133.96
65	0.47	46.74	89.38
66	0.31	33.16	57.73
67	0.20	22.89	35.90
68	0.12	15.32	21.33
69	0.07	9.83	12.03
70	0.04	6.06	6.36
71	0.02	3.54	3.11
72	0.01	1.94	1.40
73	0.01	1.00	0.57
74	0.00	0.45	0.21
75	0.00	0.19	0.07
76	0.00	0.07	0.02
77	0.00	0.02	0.01
78	0.00	0.01	0.00

## 1. Purpose and Scope

The purpose of this memorandum is to justify the premium rates for the proposed policy and rider forms. The proposed forms offer Facility Only Insurance on a participating basis that is individually underwritten and issued. The proposed forms will replace the existing non-participating policy forms MM-400, et al. for the purposes of new business. The following is a list of the proposed forms being filed on a nationwide basis. Please note that a state specific suffix may be added to the forms listed below.

Item	Form Number
Facility Only Policy	MM501-P-VA
Compound Inflation Protection Rider	MM500R-CIP
Simple Inflation Protection Rider	MM500R-SIP
Restoration of Benefits Rider	MM500R-ROB
Shortened Benefit Period Nonforfeiture Rider	MM500R-SBN-VA
Return of Premium on Death Rider	MM500R-ROP
Full Return of Premium Rider	MM500R-FROP
Waiver of Premium for Covered Partner Rider	MM500R-WOP
Paid-Up Survivor Rider	MM500R-SVR
Shared Care Rider	MM500R-SCB
10-Year Premium Payment Endorsement	ME-10PM
Paid-Up at Age 65 Premium Payment Endorsement	MME-P65
Discounted Renewal Premium Payment Endorsement	n/a

## 2. **Benefit Description**

These forms provide Long Term Care Insurance that is intended to comply with Internal Revenue Code Section 7702B(b), and are therefore intended to qualify for the tax treatment enacted as a part of the 1996 HealthCare Reform legislation.

### Facility Only Policy

This policy provides daily reimbursement of the costs associated with qualified long term care services provided in a facility setting pursuant to a plan of care, up to a specified daily benefit amount. The total of all benefits paid under the policy is subject to a specified total benefit amount that is administered as a "pool of money".

#### Benefit Amounts:

The Daily Benefit Amount at issue is subject to a minimum of \$50 and may be purchased in \$10 increments.

The total benefit options available are 730, 1095, 1460, 1825, 2190, 3650 times the daily benefit amount as well as an option for an unlimited total benefit amount.

#### Elimination Period:

To receive benefits for services provided within the U.S., its territories and possessions, and Canada a chronically ill insured must satisfy the policy elimination period. The elimination period options are 30, 60, 90, and 180 service days. This requirement need only be satisfied once during the lifetime of the policy. Service days used to satisfy this requirement may be accumulated from separate claims. This requirement may also be satisfied by the receipt of services outside of the United States, its territories or possessions and Canada.

To receive benefits for services provided outside of the U.S., its territories and possessions, and Canada a chronically ill individual must first satisfy the policy's elimination period and then satisfy an additional per occurrence elimination period. The elimination period for coverage outside of the United States is equal to the policy elimination period.

#### Other Policy Benefits:

Facility Prescription Drug Benefit – pays up to 1 times the DBA per month for prescriptions drugs while confined in a facility

Facility Bed Reservation Benefit – pays up to 60 times the DBA per policy year for facility bed reservation

Personal Care Advisor Benefit – Optional Benefit meant to assist the insured during the claim process. Does not count against the total benefit amount

Coverage Outside of the United States – provides benefits for services provided outside the US, its territories or possessions, and Canada. The daily benefit is 50% of DBA. The maximum amount that may be received under this benefit is limited to 25% of the policy's total benefit amount. If the policy has an unlimited benefit amount then the maximum for this benefit is 3,650 times the DBA times 50%.

Waiver of Premium – waives the policy premium after satisfaction of the elimination period and while benefits are being paid.

Contingent Non-Forfeiture – provides a non-forfeiture benefit in the event that an insured lapses their coverage as a result of a substantial increase in the policy premium

#### Benefit Riders

Compound Inflation Protection – inflates the DBA by 5% each year. All other benefit amounts are increased in proportion to the increase in the DBA.

Simple Inflation Protection – inflates the DBA by 5% of the original DBA each year. All other benefit amounts are increased in proportion to the DBA.

Restoration of Benefits – if the insured recovers prior to exhausting the total benefit amount the total benefit amount will be restored to the level it would have been if benefits had not been paid. Benefits may be restored more than once. However, the total amount that can be restored over the life of the policy is an amount equivalent to the original total benefit of the policy.

Shortened Benefit Period Nonforfeiture – NAIC Shortened Benefit Period Return of Premium on Death – if the insured dies while the policy is in force all premiums paid for the policy less any claims paid under the policy will be returned to insured's beneficiary

Full Return of Premium – if the insured dies while the policy is in force all premiums paid for the policy will be returned to the insured's beneficiary.

Waiver of Premium for Covered Partner – waives the policy premium when the covered partner's premium is waived on their policy.

Paid-Up Survivor – if the insured's covered partner dies the insured's policy will be paid-up on the later of the 10<sup>th</sup> policy anniversary or the date of the covered partner's death.

Shared Care – establishes a third benefit pool that is available to the insured and their covered partner once they have exhausted the total benefit amount of their policy

#### Premium Payment Options

10-Year premium Payment – policy is paid-up on the 10th policy anniversary  
Paid-Up at Age 65 – policy is paid-up on when the insured attained age 65 (not available above age 55).

Discounted Renewal Premium – Insured agrees to pay a higher 1<sup>st</sup> year premium in return for discounted renewal premiums.

#### Dividends

The policy is intended to be participating policy. Explicit dividend margin has been incorporated into the morbidity assumption used to develop the premium rates for this product. The dividend margin will be released as policy experience emerges. Therefore the dividend pattern is expected to follow the pattern of expected paid claims for these policies. As a result the company does not intend to credit a dividend until the later of the 10<sup>th</sup> Policy anniversary and the anniversary after the year in which the insured attains age 65. Dividends will be used to reduce future premiums. If a policy is not in premium paying status the dividends will be used to increase future benefits.

### 3. Renewability

The proposed forms are guaranteed renewable for life of the insured.

### 4. Applicability

The rates are being filed on a nationwide basis and will be marketed to new policyholders upon approval and when made available in your state.

### 5. Morbidity

The basis of the morbidity assumptions were those used in the development of the company's currently approved policy form (MM-400, et al.). Modified based on the experience provided by our reinsurance carrier. Sample claim costs are provided in Exhibit 4.

### 6. Mortality

Mortality is equal to:

- 80% of Annuity 2000 for active lives plus underwriting selection
- Disabled Life Mortality is assumed to be the lesser of the claim termination rate and a multiple of the active life mortality rate. The multiple varies by claim termination age as follows:
  - For claim termination ages  $\leq 75$  the multiple is 20
  - For claim termination ages  $\geq 90$  the multiple is 5
  - The multiple grades linearly from 75 to 90

### 7. Lapse Rates

Policy Year	Premiums Payable for Life of Policy	Paid-Up Premium
1	3.50%	3.50%
2	2.75%	0.00%
3	2.00%	0.00%
4	1.50%	0.00%
5	1.00%	0.00%
6	0.75%	0.00%
7+	0.65%	0.00%

### 8. Expenses

Sales Expenses:

Policy	Percent of Premium			
	Base Premium		Excess Premium	
	Other Sales	Writing Agent	Other Sales	Writing Agent

Massachusetts Mutual Life Insurance Company  
Actuarial Memorandum

Year	Expense	Commission	Expense	Commission
1	77.35%	50%	12.71%	6%
2	7.86%	6%	6.80%	6%
3	4.16%	6%	4.16%	6%
4 to 10	2.41%	6%	2.41%	6%
11+	1.11%	1%	1.11%	1%

Base Premium is the level premium for the life of the policy associated with the base policy and all riders except for the non-forfeiture rider, both return of premium riders, and the paid-up survivorship rider.

Excess Premium is the premium associated with premium payment options other than level premium for the life of the policy and premium for the non-forfeiture, both return of premium, and the paid-up survivorship riders.

Other Expenses:

	Other Percent of Premium*		Other Per Policy		Percent of Paid Claims
Issue Age	Year 1	Year 2+	Year 1	Year 2+	All Yrs.
< 40	19.25%	8%	\$625	\$60	5%
40 to 44	19.25%	8%	\$625	\$60	5%
45 to 49	19.25%	8%	\$635	\$60	5%
50 to 54	19.25%	8%	\$635	\$60	5%
55 to 59	19.25%	8%	\$650	\$60	5%
60 to 69	19.25%	8%	\$660	\$60	5%
65 to 69	19.25%	8%	\$780	\$60	5%
70 to 74	19.25%	8%	\$1,140	\$60	5%
75 to 79	19.25%	8%	\$1,630	\$60	5%
>80	19.25%	8%	\$3,810	\$60	5%

\* includes premium tax

## 9. Marketing Method

These forms are intended to be sold through the company's career agency system. This include company career agents and independent brokers contracting through one of the company's general agencies

## 10. Underwriting

All applicants are required to submit an application containing a medical history questionnaire. For applicants less than 70 years old the company will perform a phone health interview. The phone health interview includes a cognitive screen for applicants aged 65 and older. For applicants aged 70 and above the company will perform a face to face interview including a cognitive screen. The company will

request an attending physician statement for all applicants. Additional tests including a paramedical exam may be ordered at the underwriter's discretion.

## 11. Premium Classes

The company has 5 underwriting classes:

Underwriting Class	Rate Level	Proportion of Business
Ultra Preferred	85% of the Base Rate	60%
Select Preferred	100% of the Base Rate	30%
Preferred	125% of the Base Rate	10%
Standard Plus	250% of the Base Rate	<0.5%
Standard	500% of the Base Rate	<0.5%

Other Discounts Available:

- 35% Spouse/Partner Discount - Both spouses/partners must be covered.
- 5% Spouse/Partner Discount – One spouse/partner is covered.
- 10% Multi-Life Discount – members of an employer group or association
- 5% Multi-Product Discount – owns another company protection product

A table of Base Premium Rates and Premium factors is attached as Exhibit 1.

## 12. Issue Age Range

The issue ages are from 18 to 84

## 13. Area Factors

Area factors were not used in the pricing of these policy forms.

## 14. Average Annual Premium and Average Issue Age

The estimated average annual premium is \$3,000.

The estimated average issue age 55.5.

## 15. Modal Premium Rules:

Premium Mode	Factor
Annual	1.00
Semi-Annual	0.52
Quarterly	0.27
Monthly PAC	0.088

## 16. Trend Assumptions

The pricing assumes that the inflation rate for qualified long term care services is 5% per year.

#### 17. Minimum Required Loss Ratio

This is the initial filing for premium rates for these policy forms. Therefore the minimum loss ratio requirement does not apply.

#### 18. Contract Reserves

Methodology: 1 Year Full Preliminary Term

##### Assumptions:

Morbidity: Pricing Morbidity plus margin for moderately adverse experience plus dividend margin.

Mortality: 80% of Annuity 2000 plus selection for active lives. Disabled Life Mortality is assumed to be the lesser of the claim termination rate and a multiple of the active life mortality rate. The multiple varies by claim termination age as follows:

For claim termination ages  $\leq 75$  the multiple is 20

For claim termination ages  $\geq 90$  the multiple is 5

The multiple grades linearly from 75 to 90

Voluntary Lapse: The lesser of 80% of the pricing lapse rate and

6% in policy year 1

4% on policy years 2 to 4

2% in policy years 5+

Valuation Interest Rate: The whole life valuation interest rate for the year in which the policy was issued (currently 4.00%).

#### 19. Distribution of Business

Issue Age Distribution	
Issue Age Range	Percent of Policies Issued
<40	3%
40 to 44	6%
45 to 49	11%
50 to 54	24%
55 to 59	28%
60 to 64	17%
65 to 69	7%
70 to 74	2%
75 to 79	1%
80 to 84	1%

Partner Discount Distribution	
Partner Status	Percent of Policies Issued
Single	10%



Massachusetts Mutual Life Insurance Company  
Actuarial Memorandum

Partner – One Policy	20%
Partner – Two Policies	70%

Underwriting Class Distribution	
Underwriting Class	Percent of Policies Issued
Ultra Preferred	60%
Select Preferred	30%
Preferred	10%
Standard Plus	<0.5%
Standard	<0.5%

Elimination Period Distribution	
Elimination Period	Percent of Policies Issued
30 Day	8%
60 Day	8%
90 Day	76%
180 Day	8%

Total Benefit Amount Distribution	
Total Benefit Amount	Percent of Policies Issued
730 times the DBA	5%
1,095 times the DBA	5%
1,460 times the DBA	5%
1,825 times the DBA	5%
2,190 times the DBA	5%
3,650 times the DBA	5%
Unlimited	70%

Inflation Protection Option Distribution	
Inflation Protection Option	Percent of Policies Issued
None	13%
Simple	35%
Compound	52%

Premium Payment Option Distribution	
Premium Payment Option	Percent of Policies Issued
Life of the Policy	85%
10 Year	14%
To Age 65	1%

Rider Take Rates	
Rider	Percent of Policies
Full Return of Premium	1%
Return of Premium Less Claims	5%
Non-Forfeiture	1%
Shared Care	10%

Massachusetts Mutual Life Insurance Company  
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Joint Waiver of Premium	50%
Paid-Up Survivorship	1%

## 20. Contingency and Risk Margins

The premium rates produce the company's minimum target rate of return on allocated capital based on pricing assumptions, which include margin for moderately adverse deviation.

The premium rates can withstand any one of the following moderately adverse experience scenarios:

- a. Claim incidence rates equal to 115% of best estimate claim incidence rates
- b. Voluntary lapse rates equal to 0% in all policy years
- c. Active and disabled life mortality rates equal to 60% of the active and disabled life mortality rates used in pricing

## 21. Proposed Effective Date

The policy forms are being filed on a nationwide basis and will be marketed when a sufficient number of states have approved the forms, rates, and advertising to allow for an efficient product roll-out.

**Actuarial Certification**

I, Kevin B. Waterman, FSA, MAAA, am a member of the American Academy of Actuaries. I meet the Academy's qualification standards for rendering this opinion and am familiar with the requirements for filing long term care insurance premiums.

In my opinion the initial premium rate schedule is sufficient to cover anticipated costs under moderately adverse experience and the premium rate schedule is reasonably expected to be sustainable over the life of the form with no future premium increases anticipated.

I have reviewed and taken into consideration the policy design and coverage provided.

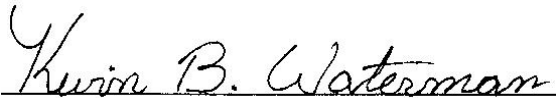
I have reviewed and taken into consideration the company's current underwriting and claims adjudication processes.

The premium rate schedule is not less than the premium rate schedule for currently marketed policy forms. A premium comparison is attached as Exhibit 2.

The assumptions used for reserves contain reasonable margins for adverse experience.

The net valuation premium for renewal years does not increase.

The difference between the gross premium and the net valuation premium for renewal years is sufficient to cover the expected renewal expenses. A demonstration is attached as Exhibit 3.



Kevin B. Waterman, FSA, MAAA  
AVP & Actuary  
Massachusetts Mutual Life Insurance Company

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Exhibit 1  
Massachusetts Mutual Life Insurance Company  
Premium Rates and Factors  
MM-501

		Annual Base Rates per \$10 of Daily Benefit Amount		Premium Factors												
Issue Age	Facility Only		Inflation Protection			10 Year Paid Up			Paid Up at 65			Non Forfeiture	Return of Premium		Joint Waiver	Paid-Up Survivor
			None	Simple	Compound	No Inflation	Simple	Compound	No Inflation	Simple	Compound		Less Claims	Full		
18 to 39	75.80		1.000	1.659	2.610	NA	NA	NA	NA	NA	NA	1.322	1.250	1.470	1.020	1.086
40	75.80		1.000	1.659	2.610	2.916	3.030	3.170	1.580	1.645	1.715	1.322	1.250	1.470	1.020	1.086
41	76.30		1.000	1.666	2.604	2.897	3.008	3.143	1.595	1.660	1.730	1.316	1.240	1.490	1.020	1.088
42	76.80		1.000	1.673	2.598	2.878	2.987	3.116	1.610	1.675	1.745	1.310	1.255	1.510	1.020	1.090
43	77.40		1.000	1.680	2.593	2.859	2.966	3.090	1.650	1.715	1.784	1.302	1.272	1.543	1.020	1.094
44	77.90		1.000	1.687	2.587	2.840	2.945	3.063	1.690	1.755	1.823	1.294	1.289	1.576	1.020	1.098
45	78.50		1.000	1.695	2.581	2.821	2.924	3.037	1.730	1.795	1.862	1.286	1.306	1.609	1.020	1.102
46	79.10		1.000	1.702	2.576	2.803	2.903	3.011	1.770	1.835	1.901	1.278	1.323	1.642	1.020	1.106
47	79.60		1.000	1.709	2.570	2.785	2.883	2.985	1.810	1.875	1.940	1.270	1.340	1.675	1.020	1.110
48	80.20		1.000	1.716	2.564	2.766	2.863	2.960	1.886	1.952	2.017	1.260	1.360	1.729	1.020	1.116
49	80.70		1.000	1.724	2.558	2.748	2.842	2.934	1.962	2.029	2.094	1.250	1.380	1.783	1.020	1.122
50	81.30		1.000	1.731	2.553	2.730	2.822	2.909	2.038	2.106	2.171	1.240	1.400	1.837	1.020	1.128
51	82.80		1.000	1.744	2.528	2.700	2.789	2.871	2.114	2.183	2.248	1.230	1.420	1.891	1.020	1.134
52	84.30		1.000	1.758	2.504	2.671	2.755	2.833	2.190	2.260	2.325	1.220	1.440	1.945	1.020	1.140
53	85.90		1.000	1.772	2.480	2.642	2.722	2.795	2.321	2.392	2.458	1.212	1.468	2.034	1.020	1.145
54	87.50		1.000	1.785	2.457	2.614	2.690	2.759	2.453	2.525	2.590	1.204	1.496	2.123	1.020	1.150
55	89.20		1.000	1.799	2.433	2.585	2.658	2.722	2.585	2.658	2.722	1.196	1.524	2.212	1.020	1.155
56	95.00		1.000	1.793	2.390	2.521	2.590	2.651	NA	NA	NA	1.188	1.552	2.301	1.020	1.160
57	101.40		1.000	1.787	2.348	2.458	2.524	2.582	NA	NA	NA	1.180	1.580	2.390	1.020	1.165
58	108.10		1.000	1.782	2.306	2.397	2.459	2.515	NA	NA	NA	1.172	1.617	2.551	1.020	1.171
59	115.30		1.000	1.776	2.265	2.338	2.396	2.450	NA	NA	NA	1.164	1.654	2.712	1.020	1.177
60	122.90		1.000	1.770	2.225	2.280	2.335	2.386	NA	NA	NA	1.156	1.691	2.873	1.021	1.183
61	132.60		1.000	1.746	2.176	2.217	2.269	2.317	NA	NA	NA	1.148	1.728	3.034	1.023	1.189
62	143.10		1.000	1.722	2.128	2.155	2.206	2.250	NA	NA	NA	1.140	1.765	3.195	1.025	1.195
63	154.40		1.000	1.699	2.081	2.096	2.144	2.184	NA	NA	NA	1.134	1.817	3.569	1.028	1.200
64	166.40		1.000	1.676	2.035	2.038	2.083	2.121	NA	NA	NA	1.128	1.869	3.943	1.031	1.205
65	179.60		1.000	1.653	1.990	1.981	2.025	2.059	NA	NA	NA	1.122	1.921	4.317	1.034	1.210
66	198.20		1.000	1.634	1.939	1.917	1.958	1.990	NA	NA	NA	1.116	1.973	NA	1.037	1.215
67	218.80		1.000	1.614	1.889	1.855	1.893	1.923	NA	NA	NA	1.110	2.025	NA	1.040	1.220
68	241.50		1.000	1.595	1.841	1.794	1.831	1.859	NA	NA	NA	1.104	2.101	NA	1.046	1.222
69	266.60		1.000	1.576	1.794	1.736	1.770	1.796	NA	NA	NA	1.098	2.177	NA	1.052	1.224
70	294.20		1.000	1.558	1.748	1.680	1.712	1.736	NA	NA	NA	1.092	2.253	NA	1.058	1.226
71	328.10		1.000	1.545	1.712	1.629	1.659	1.682	NA	NA	NA	1.086	2.329	NA	1.064	1.228
72	366.00		1.000	1.532	1.677	1.580	1.607	1.629	NA	NA	NA	1.080	2.405	NA	1.070	1.230
73	408.20		1.000	1.519	1.643	1.532	1.557	1.578	NA	NA	NA	1.076	2.521	NA	1.078	1.230
74	455.30		1.000	1.506	1.609	1.486	1.509	1.529	NA	NA	NA	1.072	2.637	NA	1.086	1.230
75	507.90		1.000	1.493	1.576	1.441	1.462	1.482	NA	NA	NA	1.068	2.753	NA	1.094	1.230
76	544.80		1.000	1.488	1.561	1.421	1.440	1.457	NA	NA	NA	1.064	2.869	NA	1.102	1.230
77	584.50		1.000	1.483	1.547	1.401	1.418	1.432	NA	NA	NA	1.060	2.985	NA	1.110	1.230
78	627.00		1.000	1.478	1.533	1.382	1.396	1.408	NA	NA	NA	1.058	3.170	NA	1.119	1.230
79	672.60		1.000	1.472	1.519	1.362	1.375	1.385	NA	NA	NA	1.056	3.355	NA	1.128	1.230
80	721.50		1.000	1.467	1.505	1.343	1.354	1.361	NA	NA	NA	1.054	3.541	NA	1.137	1.230
81	759.90		1.000	1.464	1.497	1.333	1.341	1.347	NA	NA	NA	1.052	3.726	NA	1.146	1.230
82	800.40		1.000	1.461	1.490	1.322	1.329	1.333	NA	NA	NA	1.050	3.911	NA	1.155	1.230
83	843.00		1.000	1.459	1.482	1.311	1.317	1.319	NA	NA	NA	1.049	4.361	NA	1.167	1.230
84	887.90		1.000	1.456	1.474	1.301	1.305	1.305	NA	NA	NA	1.048	4.811	NA	1.179	1.230

Discounts	
Spouse Discount	35%
Married Discount	5%
Multi-Life Discount	10%
Multi-Product Discount	5%

Underwriting Rate Classes	
Ultra Preferred	0.850
Select Preferred	1.000
Preferred	1.250
Standard Plus	2.500
Standard	5.000

Discounted Renewal Premium Factors	
First Year Premium	3.650
Renewal Year Premium	0.750

Modal Factors	
Annual	1.000
Semi-Annual	0.520
Quarterly	0.270
Monthly-PAC	0.088

Elimination Period	Premium Factor
30 Day	1.200
60 Day	1.100
90 Day	1.000
180 Day	0.880

Benefit Period	Premium Factor	Shared Care	Restoration of Benefits
Lifetime	1.000	1.000	1.000
10 Year	0.900	1.090	1.025
6 Year	0.760	1.200	1.055
5 Year	0.680	1.280	1.085
4 Year	0.600	1.370	1.095
3 Year	0.520	1.390	1.095
2 Year	0.440	1.310	1.095

Exhibit 2  
Massachusetts Mutual Life Insurance Company  
Premium Rate Comparison

Policy Form MM-501 Annual Premium Rate per \$10 DBA Ultra Preferred Rate Class 90 Day Enhanced Elimination Period						
Issue Age	No Inflation protection			Compound Inflation protection		
	Benefit Period			Benefit Period		
	3 Year	5 Year	Lifetime	3 Year	5 Year	Lifetime
45	\$36.76	\$48.07	\$70.69	\$94.87	\$124.06	\$182.45
55	\$41.78	\$54.63	\$80.34	\$101.64	\$132.91	\$195.46
65	\$84.15	\$110.04	\$161.82	\$167.46	\$218.98	\$322.03
75	\$237.95	\$311.16	\$457.60	\$375.01	\$490.40	\$721.17

Policy Form MM-400 Facility Only Annual Premium Rate Ultra Preferred Rate Class 90 Day Elimination Period						
Issue Age	No Inflation protection			Compound Inflation protection		
	Benefit Period			Benefit Period		
	3 Year	5 Year	Lifetime	3 Year	5 Year	Lifetime
45	\$25.06	\$33.81	\$39.78	\$81.45	\$109.89	\$129.29
55	\$36.19	\$48.82	\$57.44	\$90.47	\$122.06	\$143.60
65	\$71.57	\$96.56	\$113.60	\$143.14	\$193.12	\$227.21
75	\$198.80	\$268.23	\$315.56	\$318.09	\$429.17	\$504.90

Ratio of MM-500 to MM-400						
Issue Age	No Inflation protection			Compound Inflation protection		
	Benefit Period			Benefit Period		
	3 Year	5 Year	Lifetime	3 Year	5 Year	Lifetime
45	146.67%	142.16%	177.70%	116.48%	112.90%	141.12%
55	115.45%	111.89%	139.87%	112.35%	108.89%	136.12%
65	117.58%	113.96%	142.45%	116.99%	113.39%	141.74%
75	119.69%	116.01%	145.01%	117.89%	114.27%	142.83%

Exhibit 3  
Actuarial Present Value of Renewal Year Gross Premium, Valuation Premium, and Expenses  
(Actuarial Present Value based on NAIC Minimum Statutory Reserve Assumptions)

Individual Sale  
Daily Reimbursement Policy  
Service Day Elimination Period  
Blended Gender and Underwriting Risk Class  
\$150 Daily Benefit Amount  
90 Day Elimination Period

Issue Age	3 Year Benefit Period												Issue Age
	No Inflation				Simple Inflation				Compound Inflation				
	Gross Premium	Valuation Premium	Expenses	Gross to Net	Gross Premium	Valuation Premium	Expenses	Gross to Net	Gross Premium	Valuation Premium	Expenses	Gross to Net	
42	9,354	2,918	2,390	4,046	15,740	6,727	3,424	5,589	24,432	15,703	5,020	3,709	42
47	9,041	3,671	2,350	3,021	15,552	7,889	3,432	4,231	23,373	16,066	4,885	2,423	47
52	9,028	4,478	2,342	2,208	16,009	8,876	3,512	3,620	22,785	15,802	4,779	2,204	52
57	9,938	5,402	2,463	2,073	17,962	9,817	3,800	4,344	23,581	15,426	4,862	3,293	57
62	12,401	6,637	2,828	2,936	21,606	10,982	4,361	6,262	26,756	15,433	5,319	6,004	62
67	16,448	8,029	3,470	4,948	27,027	12,068	5,233	9,726	31,629	15,393	6,080	10,156	67
72	22,833	9,644	4,553	8,635	35,757	13,196	6,711	15,850	39,146	15,571	7,352	16,223	72
77	28,966	11,380	5,712	11,874	44,385	14,203	8,316	21,866	46,179	15,799	8,685	21,695	77

Issue Age	6 Year Benefit Period												Issue Age
	No Inflation								Compound Inflation				
	Gross Premium	Valuation Premium	Expenses	Gross to Net	Gross Premium	Valuation Premium	Expenses	Gross to Net	Gross Premium	Valuation Premium	Expenses	Gross to Net	
42	13,633	4,098	3,013	6,522	22,950	9,576	4,518	8,856	35,623	22,431	6,833	6,359	42
47	13,165	5,149	2,974	5,042	22,658	11,218	4,548	6,893	34,053	22,906	6,655	4,492	47
52	13,129	6,265	2,989	3,875	23,300	12,602	4,690	6,007	33,162	22,489	6,526	4,147	52
57	14,429	7,544	3,196	3,689	26,106	13,916	5,140	7,051	34,274	21,910	6,677	5,688	57
62	17,962	9,256	3,759	4,947	31,341	15,547	5,986	9,808	38,811	21,879	7,371	9,561	62
67	23,742	11,181	4,720	7,841	39,092	17,056	7,281	14,755	45,748	21,784	8,504	15,459	67
72	32,798	13,367	6,305	13,126	51,509	18,577	9,436	23,496	56,390	21,956	10,360	24,074	72
77	41,334	15,664	7,969	17,701	63,591	19,882	11,743	31,966	66,161	22,163	12,273	31,725	77

Issue Age	Lifetime Year Benefit Period												Issue Age
	No Inflation								Compound Inflation				
	Gross Premium	Valuation Premium	Expenses	Gross to Net	Gross Premium	Valuation Premium	Expenses	Gross to Net	Gross Premium	Valuation Premium	Expenses	Gross to Net	
42	17,899	5,172	3,632	9,096	30,139	12,208	5,600	12,331	46,783	28,893	8,632	9,259	42
47	17,261	6,487	3,591	7,184	29,723	14,282	5,647	9,794	44,671	29,451	8,404	6,816	47
52	17,181	7,876	3,623	5,682	30,514	16,021	5,846	8,648	43,431	28,872	8,247	6,312	52
57	18,833	9,459	3,909	5,464	34,114	17,663	6,448	10,003	44,787	28,083	8,458	8,246	57
62	23,353	11,556	4,655	7,142	40,820	19,668	7,561	13,591	50,550	27,949	9,372	13,230	62
67	30,692	13,876	5,908	10,908	50,673	21,478	9,246	19,949	59,301	27,702	10,842	20,757	67
72	42,058	16,451	7,939	17,667	66,320	23,243	12,014	31,063	72,606	27,749	13,217	31,640	72
77	52,437	19,118	10,013	23,307	81,153	24,716	14,909	41,527	84,432	27,834	15,600	40,997	77

Exhibit 4  
Sample Pricing Claim Costs per \$1 of DBA  
Facility Only, No Inflation Protection, Lifetime Benefit Period, 90 Day Elimination Period

[illegible][illegible]

Massachusetts Mutual Life Insurance Company  
Actuarial Memorandum  
Individual Long Term Care Insurance  
Policy Forms: MM500-P-1-VA, et al

1. Purpose and Scope

The purpose of this filing is to update the new business premium rates for the company's currently marketed Individual Long Term Care insurance policy form. Premium rates are being updated to reflect industry experience as reported in the Intercompany Study 1984-2004 published by the Society of Actuaries Long Term Care Experience Committee (2004 Study). The company's currently marketed policy forms will be re-numbered as a result of the new business premium rate change. The re-numbered policy forms are identical to the forms they are replacing. These forms offer individual Long Term Care Insurance on a participating basis that is individually underwritten and issued. The following is a list of the proposed forms being filed on a nationwide basis. Please note that a state specific suffix may be added to the forms listed below.

Item	Form Number
Comprehensive LTC Policy	MM500-P-1-VA
Enhanced Elimination Period Rider	MM500R-EEP-1
Waiver of Elimination Period for Home and Community Based Services Rider	MM500R-WOE-1
Monthly Benefit Rider	MM500R-MTH-1
Compound Inflation Protection Rider	MM500R-COMP-1
Restoration of Benefit Rider	MM500R-ROB-1
Non-Forfeiture Rider	MM500R-SBN-1-VA
Return of Premium	MM500R-ROP-1
Full Return of Premium Rider	MM500R-FROP-1
Covered Partner Waiver of Premium Rider	MM500R-WOP-1
Paid-Up Survivorship Rider	MM500R-SVR-1
Shared Care Rider	MM500R-SCB-1
10-Year Paid –Up Premium Option	MME-10P-1
Paid – Up at 65 Premium Option	MME-P65-1
Discounted Renewal Premium Option	N/A

2. Benefit Description

These forms provide individual Long Term Care Insurance that is intended to comply with Internal Revenue Code Section 7702B(b), and are therefore intended to qualify for the tax treatment enacted as a part of the 1996 HealthCare Reform legislation.

Comprehensive Policy

This policy provides daily reimbursement of the costs associated with qualified long term care services provided in a facility or community based setting pursuant to a plan of care, up to a specified daily benefit amount.



Massachusetts Mutual Life Insurance Company  
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Individual Long Term Care Insurance  
Policy Forms: MM500-P-1-VA, et al

The total of all benefits paid under the policy is subject to a specified total benefit amount that is administered as a "pool of money".

Benefit Amounts:

The Daily Benefit Amount at issue is subject to a minimum of \$50 and may be purchased in \$10 increments.

The total benefit options available are 730, 1095, 1460, 1825, 2190, 3650 times the daily benefit amount as well as an option for an unlimited total benefit amount.

Elimination Period:

To receive benefits for services provided within the U.S., its territories and possessions, and Canada a chronically ill insured must satisfy the policy elimination period. The elimination period options are 30, 60, 90, and 180 service days. This requirement need only be satisfied once during the lifetime of the policy. Service days used to satisfy this requirement may be accumulated from separate claims. This requirement may also be satisfied by the receipt of services outside of the United States, its territories or possessions and Canada.

To receive benefits for services provided outside of the U.S., its territories and possessions, and Canada a chronically ill individual must first satisfy the policy's elimination period and then satisfy an additional per occurrence elimination period. The elimination period for coverage outside of the United States is equal to the policy elimination period.

Other Policy Benefits:

Facility Prescription Drug Benefit – pays up to 1 times the DBA per month for prescriptions drugs while confined in a facility

Facility Bed Reservation Benefit – pays up to 60 times the DBA per policy year for facility bed reservation

Respite Care Benefit – pays up to 30 times the DBA per policy year for respite care.

Supportive Benefits

Emergency Response Benefit – pays up to ½ times the DBA per month for an emergency response system

Ambulance Benefit – pays up to 4 times the DBA per policy year for ambulance services to/from a facility from/to a community based care setting.

- Caregiver Training Benefit – pays up to 5 times the DBA during the life of the policy for training of an informal caregiver
- Alternate Plan of Care Benefit – flexible benefit designed to entertain cost effective alternative care options.
- Personal Care Advisor Benefit – Optional Benefit meant to assist the insured during the claim process. Does not count against the total benefit amount
- Coverage Outside of the United States – provides benefits for services provided outside the US, its territories or possessions, and Canada. The maximum daily benefit is 50% of DBA. The maximum amount that may be received under this benefit is limited to 25% of the policy's total benefit amount. If the policy has an unlimited benefit amount then the maximum for this benefit is 3,650 times the DBA times 50%.
- Waiver of Premium – waives the policy premium after satisfaction of the elimination period and while benefits are being paid.
- Contingent Non-Forfeiture – provides a non-forfeiture benefit in the event that an insured lapses their coverage as a result of a substantial increase in the policy premium

#### Benefit Riders

- Enhanced Elimination Period – changes to the administration of the elimination period from service day to "1-in-7=7" (credits 7 days towards satisfaction of the elimination period when covered services are received at least 1 day in a calendar week.
- Waiver of Elimination Period for Home and Community Based Services – waives the requirement to satisfy the elimination period in order to receive benefits for home and community based services. Home and community based service days that are reimbursed under this rider will count towards satisfaction of the policy elimination period.
- Monthly Benefit Rider – changes the daily benefit amount to a monthly benefit amount for the purposes of Home and Community Based Services
- Compound Inflation Protection Rider – inflates the DBA by an amount chosen at issue (3% or 5%) each year. The unused portion of all other benefit amounts is increased in proportion to the increase in the DBA.
- Restoration of Benefit Rider – if the insured recovers prior to exhausting the total benefit amount the total benefit amount will be restored to the level it would have been if benefits had not been paid. Benefits may be restored more than once. However, the total amount that can be restored over the life of the policy is an amount equivalent to the original total benefit of the policy.
- Non-Forfeiture Rider – NAIC Shortened Benefit Period

Return of Premium Rider – if the insured dies while the policy is in force all premiums paid for the policy less any claims paid under the policy will be returned to insured's beneficiary

Full Return of Premium Rider – if the insured dies while the policy is in force all premiums paid for the policy will be returned to the insured's beneficiary.

Covered Partner Waiver of Premium – waives the policy premium when the covered partner's premium is waived on their policy.

Paid-Up Survivorship – if the insured's covered partner dies the insured's policy will be paid-up on the later of the 10<sup>th</sup> policy anniversary or the date of the covered partner's death.

Shared Care – establishes a third benefit pool that is available to the insured and their covered partner once they have exhausted the total benefit amount of their policy

#### Premium Payment Options

10-Year Paid Up Premium Option – policy is paid-up on the 10th policy anniversary

Paid-Up at Age 65 Premium Option – policy is paid-up on the anniversary the insured attains insurance age 65 (not available above issue age 55).

Discounted Renewal Premium Option – Insured agrees to pay a higher 1<sup>st</sup> year premium in return for discounted renewal premiums.

#### Dividends

The policy is a participating policy. Explicit dividend margin has been incorporated into the premium rates for this product. The dividend margin will be released as policy experience emerges. Dividends are not guaranteed and the company does not intend to credit a dividend until the insured attains insurance age 65 and the policy has been in force for 10 years. Dividends will be used to reduce future premiums. If a policy is not in premium paying status the dividends will be accumulated and paid upon policy termination.

#### 3. Renewability

The proposed forms are guaranteed renewable for life of the insured.

#### 4. Applicability

The rates are being filed on a nationwide basis and will be marketed to new policyholders upon approval and when made available in your state.

## 5. Morbidity

Sample claim costs are provided in Exhibit 2.

The claim incidence assumption is derived using industry experience as reported in the 2004 study adjusted, to the extent credible, by the aggregate experience of the company's reinsurer.

The claim termination assumption is derived using industry experience as reported in the 2004 study.

The benefit utilization assumptions are derived using the following:

- Industry experience as reported in the 2004 study.
- CPI data for Nursing Home and Adult Day Care Services
- CPI data for Care of Invalids and Elderly at Home
- Various cost of care surveys published by the long term care insurance industry
- The company's actual distribution of daily benefits amounts by state and issue year of company's individual long term care business

## 6. Mortality

Active life mortality rates are provided in Exhibit 3. The mortality assumption is derived using industry experience as reported in the 2004 study.

## 7. Lapse Rates

Lapse rates are provided in Exhibit 4. The basis of the lapse assumption is derived from the actual experience of the company's individual long term care business.

## 8. Expenses

The expense assumptions are derived from the actual expenses to be allocated to the company's individual long term care business for the 2011 calendar year. Sales Expenses (percent of premium)

Policy Year	Writing Agent Commissions		Other Sales Expense
	Multi-Life = No	Multi-Life = Yes	
1	50%	40%	103.75%
2	6%	6%	1.5%
3	6%	6%	1.2%
4 to 10	6%	6%	1.0%
11+	1%	1%	0.3%

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Actuarial Memorandum  
Individual Long Term Care Insurance  
Policy Forms: MM500-P-1-VA, et al

## Administrative and Overhead Expenses

Issue Age	Per Policy Issued	Per Policy In Force	Percent of Premium*	Percent of Paid Claims
<40	\$651	\$5 per month	6%	5%
40 to 44	\$651	\$5 per month	6%	5%
45 to 49	\$669	\$5 per month	6%	5%
50 to 54	\$669	\$5 per month	6%	5%
55 to 59	\$703	\$5 per month	6%	5%
60 to 64	\$740	\$5 per month	6%	5%
65 to 69	\$880	\$5 per month	6%	5%
70 to 74	\$1331	\$5 per month	6%	5%
75 to 79	\$1960	\$5 per month	6%	5%
80+	\$2495	\$5 per month	6%	5%

\* includes premium tax

### 9. Marketing Method

These forms are intended to be sold through the company's career agency system. This include company career agents and independent brokers contracting through one of the company's general agencies

### 10. Underwriting

All applicants are required to submit an application containing a medical history questionnaire. For applicants less than 70 years old the company will perform a phone health interview. The phone health interview includes a cognitive screen for applicants aged 65 and older. For applicants aged 70 and above the company will perform a face to face interview including a cognitive screen. The company will request an attending physician statement for all applicants. Additional tests including a paramedical exam may be ordered at the underwriter's discretion.

### 11. Premium Classes

The company has 5 underwriting classes:

Underwriting Class	Rate Level
Ultra Preferred	90% of the Base Rate
Select Preferred	100% of the Base Rate
Preferred	125% of the Base Rate
Standard Plus	250% of the Base Rate
Standard	500% of the Base Rate

Discounts Available:

- 30% Spouse/Partner Discount - Both spouses/partners must be covered.
- 15% Spouse/Partner Discount – One spouse/partner is covered.
- 10% Multi-Life Discount – members of an employer group or association
- 5% Multi-Product Discount – owns another company protection product

Base Premium Rates, Premium factors, and a sample premium calculation are attached as Exhibits 1a, 1b, and 1c.

12. Issue Age Range

Subject to underwriting requirements, coverage is available to those aged 18 to 84 at issue.

13. Area Factors

Area factors were not used in the pricing of these policy forms.

14. Average Annual Premium

The estimated average annual premium, based on the anticipated mix of business including all riders and options, is \$3,706.

15. Anticipated Loss Ratio

Under the NAIC Model Law for Long Term Care Insurance there is no minimum required loss ratio for the initial filing of new business premium rates.

The anticipated lifetime loss ratio under moderately adverse experience is 65% for anticipated mix of business with the standard premium payment option. A durational loss ratio exhibit is attached as Exhibit 5.

The anticipated loss ratio was calculated as the present value of incurred claims divided by the difference between the present value of earned premiums and the present value of anticipated dividends. Anticipated dividends are based on the company's 2011 dividend scale. Present values were calculated at the maximum valuation interest rate (4.00% for 2011).

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Individual Long Term Care Insurance  
Policy Forms: MM500-P-1-VA, et al

16. Distribution of Business

Issue Age Range	Percent of Policies Issued
<40	2%
40 to 44	3%
45 to 49	7%
50 to 54	18%
55 to 59	29%
60 to 64	25%
65 to 69	11%
70 to 74	3%
75 to 79	1%
80 to 84	1%

Partner Status	Percent of Policies Issued
Single	21%
Partner – One Policy	13%
Partner – Two Policies	66%

Underwriting Class	Percent of Policies Issued
Ultra Preferred	45%
Select Preferred	45%
Preferred	9%
Standard Plus	1%
Standard	<0.1%

Elimination Period	Percent of Policies Issued
30 Day	3%
60 Day	3%
90 Day	87%
180 Day	7%

Total Benefit Amount	Percent of Policies Issued
730 times the DBA	5%
1,095 times the DBA	19%
1,460 times the DBA	11%
1,825 times the DBA	26%
2,190 times the DBA	9%
3,650 times the DBA	5%
Unlimited	25%

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Inflation Protection Option	Percent of Policies Issued
None	12%
Compound 3%	53%
Compound 5%	35%

Premium Payment Period	Percent of Policies Issued
Life of the Policy	89%
10 Year	9%
To Age 65	2%

Rider Take Rates	
Rider	Percent of Eligible Policies
HCBS Monthly Benefit	20%
Enhanced EP	25%
Waiver of EP for HCBS	8%
Full Return of Premium	<0.5%
Return of Premium Less Claims	1%
Non-Forfeiture	1%
Shared Care	22%
Joint Waiver of Premium	54%
Paid-Up Survivorship	3%

#### 17. Contingency and Risk Margins

For business with the standard premium option, the anticipated lifetime loss ratio using best estimate assumptions before dividends is 52.6%. The anticipated lifetime loss ratio under moderately adverse experience before dividends is 60.1%. On a present value basis, the company's 2011 dividend scale is equal to 7.6% of premium. If dividends are treated as a reduction in premium, the anticipated loss ratio under moderately adverse experience after dividends is  $65.0\% = 60.1\% / (100\% - 7.6\%)$

- Total margin as a percent of premium is  $12.4\% = 65.0\% - 52.6\%$
- Total margin as a percent of claims is  $23.6\% = 65.0\% / 52.6\% - 100\%$

The contingency and risk margins incorporated into the limited premium payment options are significantly larger reflecting the additional risk associated with these premium options.

#### 18. Proposed Effective Date

The premium rates are being filed on a nationwide basis and will be implemented when a sufficient number of states have approved the forms, rates, and



advertising to allow for an efficient product roll-out. This is not anticipated to occur before October 31, 2011

### **Actuarial Certification**

I, Kevin B. Waterman, FSA, MAAA, am a member of the American Academy of Actuaries. I meet the Academy's qualification standards for rendering this opinion and am familiar with the requirements for filing long term care insurance premiums.

To the best of my knowledge and judgment

- This Certification is in compliance with applicable laws, regulations, and rules of the jurisdiction in which the filing is made;
- I have complied with all applicable Actuarial Standards of Practice.
- I recognize that the certification is a prescribed statement of actuarial opinion.

Further, in making this certification I make the following statements:

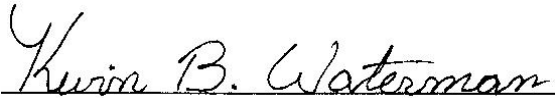
- The initial premium rate schedule is sufficient to cover anticipated costs under moderately adverse experience and the premium rate schedule is reasonably expected to be sustainable over the life of the form with no future premium increases anticipated.
- I have reviewed and taken into consideration the policy design and coverage provided.
- I have reviewed and taken into consideration the company's current underwriting and claims adjudication processes.
- The premium rate schedule is not less than the premium rate schedule for currently marketed policy forms.

### **Contract Reserves**

- Contract Reserves are calculated in accordance with minimum reserve standards for long term care insurance using a 1 year full preliminary term methodology.
- Contract reserves are equal to 105% of a tabular reserve calculated using the following assumptions:

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Actuarial Memorandum  
Individual Long Term Care Insurance  
Policy Forms: MM500-P-1-VA, et al

- 105% of Claim Incidence assumed in Pricing
  - 95% of Claim Termination assumed in Pricing
  - 95% of Mortality assumed in Pricing
  - 80% of Lapse rates assumed in pricing for policy years 1 through 4 subject to a maximum of 6% in the 1<sup>st</sup> policy year and 4% in policy years 2 through 4.
  - 100% of Lapse Rates assumed in pricing for policy years 5+ subject to a maximum of 2%.
  - The maximum valuation interest rate (4% for 2011 issues)
- Contract reserves contain reasonable margins for adverse experience.
  - The net valuation premium for renewal years does not increase.
  - The difference between the gross premium and the net valuation premium for renewal years is sufficient to cover the expected renewal expenses. Test results are provided in Exhibits 6a, 6b, and 6c.



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AVP & Actuary  
Massachusetts Mutual Life Insurance Company

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## Exhibit 1a

Base Premium Rates and Premium Rate Factors								
Issue Age	Annual Base Rate Per \$10 DBA		Premium Payment Option			Inflation Protection		
	Comprehensive		Standard	10-Year Paid-Up	Paid-Up At 65	None	3% Compound	5% Compound
18	\$69.84		1.000	3.269	1.811	1.000	2.333	6.256
19	\$69.84		1.000	3.269	1.811	1.000	2.333	6.195
20	\$69.84		1.000	3.269	1.811	1.000	2.333	6.135
21	\$69.84		1.000	3.269	1.811	1.000	2.333	6.075
22	\$69.84		1.000	3.269	1.811	1.000	2.333	6.016
23	\$69.84		1.000	3.269	1.811	1.000	2.333	5.957
24	\$69.84		1.000	3.269	1.811	1.000	2.333	5.899
25	\$69.84		1.000	3.269	1.811	1.000	2.333	5.842
26	\$69.84		1.000	3.269	1.811	1.000	2.333	5.785
27	\$69.84		1.000	3.269	1.811	1.000	2.333	5.728
28	\$69.84		1.000	3.269	1.811	1.000	2.333	5.673
29	\$69.84		1.000	3.269	1.811	1.000	2.333	5.617
30	\$69.84		1.000	3.269	1.811	1.000	2.333	5.563
31	\$69.84		1.000	3.269	1.811	1.000	2.333	5.508
32	\$69.84		1.000	3.269	1.811	1.000	2.333	5.455
33	\$69.84		1.000	3.269	1.811	1.000	2.333	5.401
34	\$69.84		1.000	3.269	1.811	1.000	2.333	5.349
35	\$69.84		1.000	3.269	1.811	1.000	2.333	5.296
36	\$69.84		1.000	3.269	1.811	1.000	2.333	5.245
37	\$69.84		1.000	3.269	1.811	1.000	2.333	5.193
38	\$69.84		1.000	3.269	1.811	1.000	2.333	5.143
39	\$69.84		1.000	3.269	1.811	1.000	2.333	5.092
40	\$69.84		1.000	3.269	1.811	1.000	2.333	5.043
41	\$72.54		1.000	3.269	1.811	1.000	2.267	4.808
42	\$75.35		1.000	3.269	1.811	1.000	2.203	4.583
43	\$78.70		1.000	3.221	1.856	1.000	2.156	4.412
44	\$82.05		1.000	3.173	1.901	1.000	2.112	4.254
45	\$85.39		1.000	3.126	1.946	1.000	2.072	4.110
46	\$88.74		1.000	3.079	1.990	1.000	2.035	3.975
47	\$92.09		1.000	3.033	2.033	1.000	2.001	3.851
48	\$95.44		1.000	2.991	2.115	1.000	1.969	3.736
49	\$98.78		1.000	2.950	2.196	1.000	1.940	3.629
50	\$102.13		1.000	2.909	2.277	1.000	1.912	3.528
51	\$105.47		1.000	2.869	2.356	1.000	1.886	3.434
52	\$108.82		1.000	2.829	2.435	1.000	1.862	3.346
53	\$113.84		1.000	2.779	2.521	1.000	1.841	3.257
54	\$118.87		1.000	2.730	2.604	1.000	1.821	3.176
55	\$123.89		1.000	2.684	2.684	1.000	1.803	3.102
56	\$128.92		1.000	2.639	NA	1.000	1.786	3.033
57	\$133.94		1.000	2.595	NA	1.000	1.771	2.969
58	\$145.66		1.000	2.527	NA	1.000	1.717	2.822
59	\$157.38		1.000	2.463	NA	1.000	1.672	2.697
60	\$169.11		1.000	2.403	NA	1.000	1.632	2.589
61	\$180.83		1.000	2.346	NA	1.000	1.598	2.495
62	\$192.55		1.000	2.293	NA	1.000	1.568	2.413
63	\$211.80		1.000	2.205	NA	1.000	1.531	2.320
64	\$231.05		1.000	2.126	NA	1.000	1.501	2.243
65	\$250.31		1.000	2.054	NA	1.000	1.475	2.177
66	\$269.56		1.000	1.990	NA	1.000	1.452	2.121
67	\$288.81		1.000	1.931	NA	1.000	1.433	2.072
68	\$328.99		1.000	1.852	NA	1.000	1.394	1.974
69	\$369.18		1.000	1.784	NA	1.000	1.364	1.898
70	\$409.36		1.000	1.725	NA	1.000	1.340	1.837
71	\$449.55		1.000	1.674	NA	1.000	1.320	1.786
72	\$489.73		1.000	1.629	NA	1.000	1.303	1.744
73	\$558.37		1.000	1.581	NA	1.000	1.283	1.702
74	\$627.02		1.000	1.542	NA	1.000	1.268	1.669
75	\$695.66		1.000	1.509	NA	1.000	1.256	1.643
76	\$764.31		1.000	1.482	NA	1.000	1.245	1.621
77	\$832.95		1.000	1.458	NA	1.000	1.237	1.603
78	\$942.62		1.000	1.414	NA	1.000	1.227	1.584
79	\$1,052.29		1.000	1.378	NA	1.000	1.219	1.569
80	\$1,161.96		1.000	1.348	NA	1.000	1.212	1.557
81	\$1,271.63		1.000	1.323	NA	1.000	1.207	1.547
82	\$1,381.30		1.000	1.302	NA	1.000	1.202	1.539
83	\$1,490.97		1.000	1.284	NA	1.000	1.198	1.532
84	\$1,600.64		1.000	1.268	NA	1.000	1.195	1.526

Exhibit 1b

## Additional Premium Rate Factors

Issue Age	Oher Riders				Paid-Up Survivor
	Non Forfeiture	Return of Premium		Joint Waiver	
		Less Clms	Full		
18	1.100	1.250	1.470	1.010	1.065
19	1.100	1.250	1.470	1.010	1.065
20	1.100	1.250	1.470	1.010	1.065
21	1.100	1.250	1.470	1.010	1.065
22	1.100	1.250	1.470	1.010	1.065
23	1.100	1.250	1.470	1.010	1.065
24	1.100	1.250	1.470	1.010	1.065
25	1.100	1.250	1.470	1.010	1.065
26	1.100	1.250	1.470	1.010	1.065
27	1.100	1.250	1.470	1.010	1.065
28	1.100	1.250	1.470	1.010	1.065
29	1.100	1.250	1.470	1.010	1.065
30	1.100	1.250	1.470	1.010	1.065
31	1.100	1.250	1.470	1.010	1.065
32	1.100	1.250	1.470	1.010	1.065
33	1.100	1.250	1.470	1.010	1.065
34	1.100	1.250	1.470	1.010	1.065
35	1.100	1.250	1.470	1.010	1.065
36	1.100	1.250	1.470	1.010	1.065
37	1.100	1.250	1.470	1.010	1.065
38	1.100	1.250	1.470	1.010	1.065
39	1.100	1.250	1.470	1.010	1.065
40	1.100	1.250	1.470	1.010	1.065
41	1.100	1.240	1.490	1.010	1.068
42	1.100	1.255	1.510	1.010	1.070
43	1.100	1.272	1.543	1.010	1.072
44	1.100	1.289	1.576	1.010	1.074
45	1.100	1.306	1.609	1.010	1.076
46	1.100	1.323	1.642	1.010	1.078
47	1.100	1.340	1.675	1.010	1.080
48	1.100	1.360	1.729	1.010	1.084
49	1.100	1.380	1.783	1.010	1.088
50	1.100	1.400	1.837	1.010	1.092
51	1.100	1.420	1.891	1.010	1.096
52	1.100	1.440	1.945	1.010	1.100
53	1.100	1.468	2.034	1.010	1.104
54	1.100	1.496	2.123	1.010	1.108
55	1.100	1.524	2.212	1.010	1.112
56	1.100	1.552	2.301	1.010	1.116
57	1.100	1.580	2.390	1.010	1.120
58	1.100	1.617	2.551	1.010	1.124
59	1.100	1.654	2.712	1.010	1.128
60	1.100	1.691	2.873	1.010	1.132
61	1.100	1.728	3.034	1.010	1.136
62	1.100	1.765	3.195	1.010	1.140
63	1.100	1.817	3.569	1.012	1.142
64	1.100	1.869	3.943	1.014	1.144
65	1.100	1.921	4.317	1.016	1.146
66	1.100	1.973	NA	1.018	1.148
67	1.100	2.025	NA	1.020	1.150
68	1.100	2.101	NA	1.022	1.150
69	1.100	2.177	NA	1.024	1.150
70	1.100	2.253	NA	1.026	1.150
71	1.100	2.329	NA	1.028	1.150
72	1.100	2.405	NA	1.030	1.150
73	1.100	2.521	NA	1.036	1.150
74	1.100	2.637	NA	1.042	1.150
75	1.100	2.753	NA	1.048	1.150
76	1.100	2.869	NA	1.054	1.150
77	1.100	2.985	NA	1.060	1.150
78	1.100	3.170	NA	1.066	1.150
79	1.100	3.355	NA	1.072	1.150
80	1.100	3.541	NA	1.078	1.150
81	1.100	3.726	NA	1.084	1.150
82	1.100	3.911	NA	1.090	1.150
83	1.100	4.361	NA	1.096	1.150
84	1.100	4.811	NA	1.102	1.150

Couples Status	Discount	Factor
Single	0%	1.000
Partner	15%	0.850
Covered Partner	30%	0.700

Underwriting Class	Factor
Ultra Preferred	0.900
Select Preferred	1.000
Preferred	1.250
Standard Plus	2.500
Standard	5.000

Discount	Discount	Factor
Multi-Life Discount	10%	0.900
Multi-Product Discount	5%	0.950

Benefit Model	Factor
Daily Reimbursement	1.000
Monthly Reimbursement	1.045

Elimination Period	Factor	Enhanced EP	HCBS EP Waiver
30 Day	1.200	1.030	1.070
60 Day	1.100	1.045	1.110
90 Day	1.000	1.060	1.160
180 Day	0.900	1.075	1.250

Benefit Period	Factor	Restoration of Benefits	Shared Care
2 Year	0.447	1.040	1.300
3 Year	0.524	1.040	1.260
4 Year	0.588	1.040	1.260
5 Year	0.635	1.040	1.280
6 Year	0.670	1.040	1.300
10 Year	0.857	1.040	1.090
Lifetime	1.000	NA	NA

Discounted Renewal Premium Option		
First Year Premium Factor		3.650
Renewal Year Premium Factor		0.750

Modal Factors	Factor
Annual	1.000
Semi-Annual	0.520
Quarterly	0.265
Monthly-PAC	0.088

Exhibit 1c

Premium Calculation Example

	Issue Age 57 - Comprehensive Base Rate	\$133.94
times	Ultra Preferred Rate Class	0.900
times	Covered Partner Discount	0.700
times	Multi-Life Discount	0.900
times	Loyal Customer Discount	0.950
times	DBA Units	20.000
times	10-Year Paid-Up Premium Option	2.595
times	Monthly Reimbursement Rider	1.045
times	30 Day Elimination Period	1.200
times	with Enhanced Elimination Period Rider	1.030
times	6 Year Benefit Period	0.670
times	Compound Inflation Protection (3%) Rider	1.771
times	Restoration of Benefits Rider	1.040
times	Nonforfeiture Benefit Rider	1.100
times	Return of Premium Rider	1.580
times	Cov Part Premium Waiver Rider	1.010
times	Paid-Up Survivorship Rider	1.120
times	Shared Care Rider	1.300
times	Semi-Annual Premium Mode	0.520
equals	*Modal Premium	\$7,931.98

\* Actual result may differ slightly due to rounding

Exhibit 2  
Sample Claim Costs  
Single Insured  
Unisex  
Select Preferred Rate Class  
Standard Premium Payment Option  
Daily Reimbursement  
90 Service Day Elimination Period  
Lifetime Benefit Period  
No Inflation Protection

	Claim Cost per \$1 of DBA								
Policy Duration	Issue Age								Policy Duration
	42	47	52	57	62	67	72	77	
0	0.25	0.32	0.44	0.56	0.86	1.85	2.86	7.29	0
1	0.27	0.36	0.47	0.62	1.06	2.32	4.05	9.54	1
2	0.29	0.39	0.50	0.67	1.27	2.74	5.45	12.33	2
3	0.29	0.42	0.50	0.75	1.50	3.50	8.23	17.73	3
4	0.32	0.45	0.56	0.84	1.75	4.03	10.86	21.70	4
5	0.36	0.49	0.62	0.95	1.99	5.06	12.18	23.46	5
6	0.40	0.52	0.69	1.16	2.49	4.66	14.59	26.55	6
7	0.43	0.56	0.75	1.38	2.94	5.56	14.55	30.00	7
8	0.47	0.56	0.83	1.62	3.27	7.86	18.49	32.63	8
9	0.51	0.63	0.93	1.90	3.64	8.61	19.36	34.70	9
10	0.55	0.70	1.04	2.15	3.98	8.44	19.77	35.16	10
11	0.58	0.77	1.27	2.68	4.99	10.01	21.32	46.88	11
12	0.62	0.84	1.50	3.16	5.95	11.68	26.86	53.96	12
13	0.63	0.93	1.75	3.50	6.73	15.30	29.49	42.47	13
14	0.70	1.03	2.05	3.88	7.73	15.03	26.83	49.11	14
15	0.78	1.15	2.31	4.24	8.74	16.48	29.59	55.81	15
16	0.86	1.39	2.87	5.29	10.66	19.67	37.55	64.90	16
17	0.94	1.63	3.36	6.30	12.42	22.85	45.63	72.36	17
18	1.03	1.90	3.69	7.11	14.23	24.10	45.67	77.95	18
19	1.13	2.20	4.08	8.14	15.89	26.96	52.91	81.94	19
20	1.24	2.46	4.42	9.16	17.39	29.51	60.30	85.36	20
21	1.48	3.04	5.48	11.12	20.69	37.47	70.00	90.89	21
22	1.72	3.52	6.47	12.87	23.86	45.30	77.68	95.83	22
23	1.97	3.80	7.24	14.60	24.93	45.31	82.99	101.85	23
24	2.24	4.15	8.20	16.15	27.62	51.87	86.64	106.58	24
25	2.48	4.45	9.15	17.53	30.00	58.37	89.76	109.87	25
26	3.03	5.47	11.02	20.71	37.83	67.15	95.18	114.13	26
27	3.49	6.43	12.69	23.79	45.53	74.16	100.10	116.54	27
28	3.73	7.19	14.41	24.84	45.47	79.17	106.17	117.15	28
29	4.07	8.15	15.95	27.51	52.08	82.65	110.93	116.06	29
30	4.37	9.09	17.31	29.86	58.64	85.62	114.19	113.46	30
31	5.37	10.95	20.45	37.67	67.48	90.78	118.43	109.59	31
32	6.31	12.60	23.48	45.35	74.54	95.45	120.75	104.76	32
33	7.05	14.32	24.53	45.32	79.57	101.42	121.20	99.52	33
34	7.99	15.87	27.16	51.89	83.08	106.14	119.88	102.03	34
35	8.92	17.22	29.43	58.39	86.06	109.44	117.00	102.43	35
36	10.74	20.33	37.18	67.18	91.25	113.69	112.80	101.42	36
37	12.36	23.34	44.77	74.19	95.95	116.11	107.60	99.70	37
38	14.08	24.40	44.82	79.20	101.93	116.74	101.79	98.10	38
39	15.61	27.00	51.25	82.69	106.66	115.67	103.86		39
40	16.94	29.24	57.58	85.66	109.95	113.10	103.78		40
41	20.00	36.96	66.17	90.81	114.20	109.25	102.26		41
42	22.95	44.51	73.05	95.49	116.62	104.47	100.08		42
43	24.00	44.60	77.97	101.46	117.23	99.29	98.09		43
44	26.55	50.97	81.40	106.18	116.13	101.83			44
45	28.68	57.21	84.32	109.48	113.53	102.29			45
46	36.32	65.72	89.38	113.73	109.65	101.33			46
47	43.75	72.54	93.98	116.15	104.81	99.66			47
48	43.96	77.42	99.90	116.78	99.56	98.10			48
49	50.15	80.83	104.60	115.71	102.06				49
50	56.14	83.71	107.90	113.13	102.46				50
51	64.39	88.74	112.15	109.28	101.43				51
52	71.02	93.29	114.60	104.49	99.71				52
53	75.78	99.19	115.28	99.31	98.10				53
54	79.10	103.88	114.29	101.85					54
55	81.91	107.18	111.81	102.31					55
56	86.80	111.43	108.07	101.34					56
57	91.23	113.89	103.42	99.66					57
58	97.06	114.59	98.45	98.10					58
59	101.71	113.63	101.15						59
60	105.01	111.20	101.79						60
61	109.25	107.52	101.01						61
62	111.74	102.93	99.52						62
63	112.50	98.05	98.10						63
64	111.64	100.83							64
65	109.34	101.56							65
66	105.81	100.86							66
67	101.41	99.45							67
68	96.83	98.10							68
69	99.84								69
70	100.82								70
71	100.40								71
72	99.24								72
73	98.11								73

Exhibit 3  
Active Life Mortality - Ultimate

Att Age	Percent of A2000 Basic	
	Male	Female
18	63%	60%
19	63%	60%
20	63%	60%
21	63%	60%
22	63%	60%
23	63%	60%
24	63%	60%
25	63%	60%
26	63%	60%
27	63%	60%
28	63%	60%
29	63%	60%
30	63%	60%
31	63%	60%
32	63%	60%
33	63%	60%
34	63%	60%
35	63%	60%
36	63%	60%
37	63%	60%
38	63%	60%
39	63%	60%
40	63%	60%
41	63%	60%
42	63%	60%
43	63%	60%
44	63%	60%
45	63%	60%
46	63%	60%
47	63%	60%
48	63%	60%
49	63%	60%
50	63%	60%
51	63%	60%
52	63%	60%
53	63%	60%
54	63%	60%
55	63%	60%
56	63%	60%
57	63%	60%
58	63%	60%
59	63%	60%
60	63%	60%
61	63%	60%
62	63%	60%
63	63%	60%
64	63%	60%
65	63%	60%
66	63%	60%

Att Age	Percent of A2000 Basic	
	Male	Female
67	63%	60%
68	63%	60%
69	63%	60%
70	63%	60%
71	63%	60%
72	57%	60%
73	57%	73%
74	57%	73%
75	66%	65%
76	66%	65%
77	70%	66%
78	73%	66%
79	72%	68%
80	73%	63%
81	75%	66%
82	78%	67%
83	74%	66%
84	78%	65%
85	86%	72%
86	79%	65%
87	89%	66%
88	90%	64%
89	90%	68%
90	99%	67%
91	99%	75%
92	106%	73%
93	106%	73%
94	106%	84%
95	106%	84%
96	106%	84%
97	106%	84%
98	106%	84%
99	106%	84%
100	105%	85%
101	105%	86%
102	105%	87%
103	104%	88%
104	104%	89%
105	104%	90%
106	103%	91%
107	103%	92%
108	102%	93%
109	102%	94%
110	102%	95%
111	101%	96%
112	101%	97%
113	101%	98%
114	100%	99%
115	100%	100%

## Exhibit 4

### Lapse Rates

[illegible][illegible]



Exhibit 5  
Anticipated Loss Ratio  
Comprehensive Benefits with Standard Annual Premium  
(Excludes All Riders)  
Moderately Adverse Experience Scenario

Pol Dur	In Force	Earned Premium	Incurred Claims	Expected Dividends	Policy Reserve	Annual Loss Ratio	Cumulative Loss Ratio	
0	1.0000	\$2,929	\$91	\$0	\$0	3%	3%	
1	0.9633	\$2,817	\$104	\$0	\$1,621	4%	3%	
2	0.9347	\$2,728	\$123	\$0	\$3,236	5%	4%	
3	0.9134	\$2,660	\$150	\$0	\$4,853	6%	4%	
4	0.8950	\$2,599	\$183	\$0	\$6,491	7%	5%	
5	0.8804	\$2,549	\$222	\$0	\$8,136	9%	5%	
6	0.8660	\$2,500	\$235	\$0	\$9,804	9%	6%	
7	0.8511	\$2,448	\$265	\$0	\$11,483	11%	6%	
8	0.8368	\$2,398	\$308	\$0	\$13,165	13%	7%	
9	0.8234	\$2,350	\$351	\$0	\$14,849	15%	7%	
10	0.8100	\$2,302	\$388	\$41	\$16,538	17%	8%	
11	0.7970	\$2,254	\$439	\$49	\$18,221	20%	9%	
12	0.7833	\$2,205	\$515	\$59	\$19,877	24%	9%	
13	0.7687	\$2,152	\$590	\$69	\$21,503	28%	10%	
14	0.7534	\$2,098	\$643	\$81	\$23,106	32%	11%	
15	0.7372	\$2,041	\$738	\$94	\$24,653	38%	12%	
16	0.7200	\$1,981	\$840	\$108	\$26,133	45%	13%	
17	0.7019	\$1,918	\$953	\$125	\$27,528	53%	14%	
18	0.6828	\$1,852	\$1,076	\$142	\$28,824	63%	16%	
19	0.6626	\$1,783	\$1,206	\$162	\$30,004	74%	17%	
20	0.6413	\$1,712	\$1,343	\$184	\$31,053	88%	18%	
21	0.6189	\$1,637	\$1,491	\$207	\$31,950	104%	20%	
22	0.5955	\$1,560	\$1,642	\$232	\$32,684	124%	22%	
23	0.5710	\$1,481	\$1,806	\$259	\$33,236	148%	23%	
24	0.5455	\$1,400	\$1,967	\$289	\$33,593	177%	25%	
25	0.5191	\$1,318	\$2,128	\$319	\$33,739	213%	27%	
26	0.4918	\$1,234	\$2,294	\$350	\$33,663	260%	29%	
27	0.4638	\$1,150	\$2,445	\$379	\$33,368	317%	31%	
28	0.4353	\$1,065	\$2,591	\$406	\$32,849	393%	33%	
29	0.4063	\$981	\$2,724	\$433	\$32,105	497%	36%	
30	0.3772	\$898	\$2,832	\$460	\$31,145	646%	38%	
31	0.3481	\$817	\$2,916	\$483	\$29,992	871%	40%	
32	0.3193	\$739	\$2,980	\$497	\$28,661	1231%	42%	
33	0.2910	\$664	\$3,014	\$499	\$27,176	1833%	44%	
34	0.2634	\$592	\$3,022	\$483	\$25,562	2773%	46%	
35	0.2369	\$525	\$2,993	\$459	\$23,855	4587%	48%	
36	0.2116	\$462	\$2,933	\$427	\$22,089	8393%	50%	
37	0.1876	\$403	\$2,854	\$391	\$20,290	22791%	52%	
38	0.1652	\$350	\$2,748	\$351	\$18,492	NA	53%	
39	0.1444	\$302	\$2,618	\$312	\$16,723	NA	55%	
40	0.1254	\$258	\$2,467	\$273	\$15,013	NA	56%	
41	0.1082	\$220	\$2,304	\$238	\$13,382	NA	58%	
42	0.0927	\$186	\$2,129	\$205	\$11,847	NA	59%	
43	0.0789	\$156	\$1,950	\$175	\$10,422	NA	60%	
44	0.0668	\$131	\$1,772	\$148	\$9,113	NA	60%	
45	0.0562	\$109	\$1,598	\$124	\$7,925	NA	61%	
46	0.0470	\$90	\$1,429	\$103	\$6,856	NA	62%	
47	0.0392	\$74	\$1,270	\$86	\$5,903	NA	62%	
48	0.0325	\$61	\$1,120	\$71	\$5,061	NA	63%	
49	0.0269	\$50	\$984	\$59	\$4,324	NA	63%	
50	0.0221	\$41	\$865	\$48	\$3,678	NA	63%	
51	0.0182	\$33	\$756	\$40	\$3,115	NA	64%	
52	0.0149	\$27	\$656	\$33	\$2,629	NA	64%	
53	0.0121	\$22	\$566	\$27	\$2,213	NA	64%	
54	0.0099	\$18	\$487	\$22	\$1,857	NA	64%	
55	0.0080	\$14	\$419	\$18	\$1,554	NA	64%	
56	0.0065	\$12	\$359	\$14	\$1,297	NA	65%	
57	0.0053	\$9	\$304	\$12	\$1,082	NA	65%	
58	0.0042	\$8	\$257	\$9	\$900	NA	65%	
59	0.0034	\$6	\$218	\$7	\$748	NA	65%	
NPV @ 4%		\$41,057.41	\$24,670.41	\$3,102.81				65%

NA - Expected Dividends exceed earned premium

Exhibit 6A  
Gross-to Net Test  
Unisex Rating  
Single Insured  
Select Preferred  
Standard Premium Payment Option  
\$170 DBA  
Comprehensive Daily Reimbursement  
90 Service Day Elimination Period  
No Riders

2 Year Benefit Period																
No Inflation Protection						3% Compound Inflation protection					5% Compound Inflation protection					
Issue Age	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Issue Age
42	\$572.58	\$284.94	\$124.80	\$162.85	Pass	\$1,261.40	\$849.95	\$202.62	\$208.83	Pass	\$2,624.16	\$1,978.41	\$356.70	\$289.04	Pass	42
47	\$699.79	\$366.23	\$140.16	\$193.40	Pass	\$1,400.28	\$948.43	\$220.22	\$231.63	Pass	\$2,694.90	\$2,015.61	\$368.36	\$310.94	Pass	47
52	\$826.92	\$477.56	\$115.14	\$234.22	Pass	\$1,539.73	\$1,076.82	\$162.65	\$300.26	Pass	\$2,766.88	\$2,092.09	\$244.46	\$430.34	Pass	52
57	\$1,017.81	\$633.14	\$180.28	\$204.39	Pass	\$1,802.54	\$1,245.47	\$272.61	\$284.46	Pass	\$3,021.88	\$2,214.93	\$416.43	\$390.52	Pass	57
62	\$1,463.19	\$842.96	\$237.55	\$382.68	Pass	\$2,294.28	\$1,445.24	\$337.68	\$511.36	Pass	\$3,530.67	\$2,350.72	\$487.33	\$692.62	Pass	62
67	\$2,194.67	\$1,171.99	\$336.64	\$686.04	Pass	\$3,144.96	\$1,753.07	\$454.96	\$936.94	Pass	\$4,547.35	\$2,604.53	\$631.07	\$1,311.75	Pass	67
72	\$3,721.46	\$1,806.05	\$553.25	\$1,362.17	Pass	\$4,849.06	\$2,358.08	\$698.70	\$1,792.27	Pass	\$6,490.22	\$3,206.48	\$914.87	\$2,368.87	Pass	72
77	\$6,329.59	\$3,013.46	\$948.81	\$2,367.31	Pass	\$7,829.70	\$3,441.59	\$1,148.85	\$2,239.26	Pass	\$10,146.33	\$4,342.66	\$1,471.01	\$4,332.66	Pass	77

3 Year Benefit Period																
No Inflation Protection						3% Compound Inflation protection					5% Compound Inflation protection					
Issue Age	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Issue Age
42	\$671.22	\$359.18	\$135.96	\$176.08	Pass	\$1,478.69	\$1,040.36	\$227.19	\$211.14	Pass	\$3,076.19	\$2,383.25	\$407.81	\$285.13	Pass	42
47	\$820.34	\$460.90	\$153.97	\$205.47	Pass	\$1,641.50	\$1,159.18	\$247.82	\$234.49	Pass	\$3,159.12	\$2,428.97	\$421.47	\$308.68	Pass	47
52	\$969.37	\$599.52	\$124.64	\$245.20	Pass	\$1,804.96	\$1,313.51	\$180.33	\$311.13	Pass	\$3,243.51	\$2,520.84	\$276.23	\$446.44	Pass	52
57	\$1,193.14	\$792.86	\$201.00	\$199.28	Pass	\$2,113.05	\$1,517.25	\$309.23	\$286.57	Pass	\$3,542.43	\$2,670.50	\$477.82	\$394.10	Pass	57
62	\$1,715.24	\$1,051.16	\$268.13	\$395.94	Pass	\$2,689.49	\$1,756.50	\$385.52	\$547.47	Pass	\$4,138.86	\$2,832.58	\$560.94	\$745.34	Pass	62
67	\$2,572.72	\$1,452.48	\$384.29	\$735.95	Pass	\$3,686.71	\$2,126.02	\$522.99	\$1,037.70	Pass	\$5,330.67	\$3,137.28	\$729.44	\$1,463.95	Pass	67
72	\$4,362.51	\$2,223.77	\$638.20	\$1,500.54	Pass	\$5,684.36	\$2,860.10	\$808.71	\$2,015.54	Pass	\$7,608.23	\$3,871.72	\$1,062.11	\$2,674.40	Pass	72
77	\$7,419.92	\$3,693.61	\$1,101.85	\$2,624.46	Pass	\$9,178.44	\$4,181.30	\$1,336.33	\$3,660.81	Pass	\$11,894.13	\$5,265.73	\$1,713.97	\$4,914.43	Pass	77

4 Year Benefit Period																
No Inflation Protection						3% Compound Inflation protection					5% Compound Inflation protection					
Issue Age	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Issue Age
42	\$753.20	\$408.67	\$145.23	\$199.29	Pass	\$1,659.30	\$1,160.24	\$247.61	\$251.45	Pass	\$3,451.91	\$2,625.53	\$450.29	\$376.10	Pass	42
47	\$920.53	\$523.54	\$165.45	\$231.55	Pass	\$1,841.98	\$1,291.27	\$270.76	\$279.95	Pass	\$3,544.97	\$2,676.89	\$465.62	\$402.46	Pass	47
52	\$1,087.76	\$679.37	\$132.54	\$275.85	Pass	\$2,025.42	\$1,460.87	\$195.03	\$369.52	Pass	\$3,639.66	\$2,778.00	\$302.64	\$559.02	Pass	52
57	\$1,338.86	\$896.56	\$218.22	\$224.08	Pass	\$2,371.13	\$1,685.87	\$339.67	\$345.59	Pass	\$3,975.09	\$2,944.70	\$528.85	\$501.54	Pass	57
62	\$1,924.73	\$1,184.67	\$293.55	\$446.51	Pass	\$3,017.98	\$1,948.35	\$425.27	\$644.35	Pass	\$4,644.37	\$3,122.57	\$622.12	\$899.69	Pass	62
67	\$2,886.94	\$1,629.59	\$423.89	\$833.46	Pass	\$4,136.99	\$2,354.51	\$579.53	\$1,202.95	Pass	\$5,981.75	\$3,458.08	\$811.20	\$1,712.47	Pass	67
72	\$4,895.34	\$2,484.86	\$708.80	\$1,701.69	Pass	\$6,378.63	\$3,169.11	\$900.13	\$2,309.39	Pass	\$8,537.47	\$4,278.14	\$1,184.47	\$3,074.87	Pass	72
77	\$8,326.17	\$4,116.27	\$1,228.98	\$2,980.92	Pass	\$10,299.47	\$4,638.01	\$1,492.10	\$4,169.36	Pass	\$13,346.85	\$5,836.34	\$1,915.82	\$5,594.68	Pass	77

5 Year Benefit Period																
No Inflation Protection						3% Compound Inflation protection					5% Compound Inflation protection					
Issue Age	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Issue Age
42	\$813.40	\$460.74	\$152.07	\$200.59	Pass	\$1,791.93	\$1,285.73	\$262.65	\$243.55	Pass	\$3,727.83	\$2,870.05	\$481.58	\$376.20	Pass	42
47	\$994.11	\$589.34	\$173.91	\$230.86	Pass	\$1,989.22	\$1,429.82	\$287.67	\$271.72	Pass	\$3,828.32	\$2,927.84	\$498.17	\$402.31	Pass	47
52	\$1,174.71	\$763.29	\$138.34	\$273.08	Pass	\$2,187.31	\$1,616.05	\$205.83	\$365.44	Pass	\$3,930.59	\$3,039.74	\$322.06	\$568.79	Pass	52
57	\$1,445.88	\$1,005.85	\$230.96	\$209.07	Pass	\$2,560.66	\$1,864.19	\$362.17	\$334.29	Pass	\$4,292.82	\$3,225.27	\$566.58	\$500.98	Pass	57
62	\$2,078.58	\$1,326.44	\$312.41	\$439.73	Pass	\$3,259.21	\$2,152.88	\$454.73	\$651.60	Pass	\$5,015.61	\$3,422.22	\$667.45	\$925.93	Pass	62
67	\$3,117.70	\$1,819.95	\$453.38	\$844.37	Pass	\$4,467.67	\$2,601.09	\$621.57	\$1,245.01	Pass	\$6,459.88	\$3,794.26	\$871.98	\$1,793.64	Pass	67
72	\$5,286.64	\$2,770.79	\$761.71	\$1,754.13	Pass	\$6,888.49	\$3,506.57	\$968.46	\$2,413.46	Pass	\$9,219.89	\$4,708.01	\$1,275.92	\$3,235.96	Pass	72
77	\$8,991.70	\$4,584.58	\$1,324.96	\$3,082.16	Pass	\$11,122.73	\$5,139.95	\$1,609.23	\$4,373.55	Pass	\$14,413.69	\$6,445.19	\$2,067.62	\$5,900.88	Pass	77

6 Year Benefit Period																	Issue Age	
No Inflation Protection						3% Compound Inflation protection						5% Compound Inflation protection						
Issue Age	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Issue Age		
42	\$858.24	\$500.52	\$157.16	\$200.55	Pass	\$1,890.70	\$1,375.29	\$273.85	\$241.55	Pass	\$3,933.30	\$3,033.22	\$504.89	\$395.18	Pass	42		
47	\$1,048.91	\$639.34	\$180.22	\$229.34	Pass	\$2,098.86	\$1,528.43	\$300.28	\$270.15	Pass	\$4,039.33	\$3,096.08	\$522.42	\$420.83	Pass	47		
52	\$1,239.46	\$826.68	\$142.67	\$270.12	Pass	\$2,307.87	\$1,726.04	\$213.88	\$367.95	Pass	\$4,147.23	\$3,215.91	\$336.52	\$594.81	Pass	52		
57	\$1,525.58	\$1,088.04	\$240.46	\$197.08	Pass	\$2,701.80	\$1,990.38	\$378.96	\$332.46	Pass	\$4,529.44	\$3,415.29	\$594.71	\$519.43	Pass	57		
62	\$2,193.14	\$1,432.29	\$326.48	\$434.38	Pass	\$3,438.85	\$2,297.35	\$476.71	\$664.79	Pass	\$5,292.06	\$3,626.23	\$701.28	\$964.54	Pass	62		
67	\$3,289.55	\$1,961.66	\$475.40	\$852.48	Pass	\$4,713.92	\$2,776.21	\$652.95	\$1,284.76	Pass	\$6,815.94	\$4,025.80	\$917.35	\$1,872.79	Pass	67		
72	\$5,578.02	\$2,981.16	\$801.15	\$1,795.71	Pass	\$7,268.17	\$3,746.02	\$1,019.38	\$2,502.76	Pass	\$9,728.08	\$5,007.71	\$1,344.09	\$3,376.27	Pass	72		
77	\$9,487.30	\$4,908.90	\$1,396.26	\$3,182.14	Pass	\$11,735.79	\$5,477.41	\$1,696.29	\$4,562.09	Pass	\$15,208.14	\$6,850.47	\$2,180.43	\$6,177.24	Pass	77		

10 Year Benefit Period																	
No Inflation Protection						3% Compound Inflation protection					5% Compound Inflation protection						
Issue Age	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Issue Age	
42	\$1,097.77	\$611.72	\$184.37	\$301.68	Pass	\$2,418.40	\$1,609.87	\$333.72	\$474.81	Pass	\$5,031.10	\$3,441.64	\$629.44	\$960.02	Pass	42	
47	\$1,341.66	\$778.40	\$213.93	\$349.34	Pass	\$2,684.66	\$1,786.82	\$367.61	\$530.23	Pass	\$5,166.73	\$3,519.26	\$652.00	\$995.47	Pass	47	
52	\$1,585.40	\$1,002.61	\$165.77	\$417.02	Pass	\$2,952.01	\$2,015.35	\$256.87	\$679.79	Pass	\$5,304.74	\$3,662.26	\$413.78	\$1,228.71	Pass	52	
57	\$1,951.37	\$1,315.94	\$291.23	\$344.20	Pass	\$3,455.88	\$2,323.94	\$468.62	\$663.32	Pass	\$5,793.62	\$3,900.01	\$745.03	\$1,148.58	Pass	57	
62	\$2,805.26	\$1,725.15	\$401.65	\$678.47	Pass	\$4,398.65	\$2,682.63	\$594.14	\$1,121.88	Pass	\$6,769.09	\$4,153.74	\$881.99	\$1,733.36	Pass	62	
67	\$4,207.67	\$2,355.91	\$592.96	\$1,258.80	Pass	\$6,029.60	\$3,251.56	\$820.52	\$1,957.52	Pass	\$8,718.30	\$4,638.50	\$1,159.64	\$2,920.16	Pass	67	
72	\$7,134.88	\$3,567.83	\$1,011.57	\$2,555.48	Pass	\$9,296.74	\$4,403.88	\$1,291.18	\$3,601.68	Pass	\$12,443.22	\$5,812.69	\$1,707.87	\$4,922.67	Pass	72	
77	\$12,135.25	\$5,778.77	\$1,776.55	\$4,579.93	Pass	\$15,011.30	\$6,369.23	\$2,160.81	\$6,481.26	Pass	\$19,452.80	\$7,905.99	\$2,782.39	\$8,764.42	Pass	77	

Lifetime Benefit Period																		
No Inflation Protection						3% Compound Inflation protection						5% Compound Inflation protection						
Issue Age	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Issue Age		
42	\$1,280.95	\$653.88	\$204.99	\$422.08	Pass	\$2,821.93	\$1,696.73	\$379.13	\$746.07	Pass	\$5,870.59	\$3,624.10	\$723.90	\$1,522.59	Pass	42		
47	\$1,565.53	\$829.29	\$239.41	\$496.83	Pass	\$3,132.63	\$1,879.87	\$418.58	\$834.17	Pass	\$6,028.86	\$3,701.96	\$750.11	\$1,576.79	Pass	47		
52	\$1,849.94	\$1,064.67	\$183.38	\$601.89	Pass	\$3,444.59	\$2,115.40	\$289.67	\$1,039.53	Pass	\$6,189.90	\$3,845.94	\$472.71	\$1,871.25	Pass	52		
57	\$2,276.98	\$1,393.63	\$329.36	\$553.99	Pass	\$4,032.53	\$2,435.00	\$536.08	\$1,061.46	Pass	\$6,760.35	\$4,090.73	\$858.12	\$1,811.51	Pass	57		
62	\$3,273.35	\$1,817.47	\$457.78	\$998.10	Pass	\$5,132.61	\$2,801.49	\$682.04	\$1,649.08	Pass	\$7,898.59	\$4,345.09	\$1,017.26	\$2,536.25	Pass	62		
67	\$4,909.77	\$2,644.71	\$680.08	\$1,764.97	Pass	\$7,035.70	\$3,380.26	\$945.12	\$2,710.32	Pass	\$10,173.04	\$4,832.85	\$1,339.81	\$4,000.38	Pass	67		
72	\$8,325.41	\$3,705.02	\$1,165.81	\$3,454.59	Pass	\$10,848.01	\$4,555.01	\$1,491.52	\$4,801.48	Pass	\$14,519.52	\$6,028.30	\$1,976.02	\$6,515.19	Pass	72		
77	\$14,160.55	\$6,945.59	\$2,053.02	\$6,161.54	Pass	\$17,516.11	\$6,543.83	\$2,500.94	\$8,471.34	Pass	\$22,698.72	\$8,145.78	\$3,223.16	\$11,329.78	Pass	77		

Exhibit 6B  
Gross-to Net Test  
Unisex Rating  
Insured with Partner Discount  
Select Preferred  
Standard Premium Payment Option  
\$170 DBA  
Comprehensive Daily Reimbursement  
90 Service Day Elimination Period  
No Riders

2 Year Benefit Period																
No Inflation Protection						3% Compound Inflation protection					5% Compound Inflation protection					Issue Age
Issue Age	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	
42	\$486.70	\$242.19	\$115.08	\$129.43	Pass	\$1,072.19	\$722.46	\$181.23	\$168.51	Pass	\$2,230.53	\$1,681.65	\$312.20	\$236.69	Pass	42
47	\$594.82	\$311.29	\$128.14	\$155.39	Pass	\$1,190.24	\$806.16	\$196.19	\$187.89	Pass	\$2,290.66	\$1,713.26	\$322.10	\$255.30	Pass	47
52	\$702.88	\$405.93	\$106.87	\$190.09	Pass	\$1,308.77	\$915.30	\$147.25	\$246.22	Pass	\$2,351.85	\$1,778.28	\$216.79	\$356.79	Pass	52
57	\$865.14	\$538.17	\$162.24	\$164.73	Pass	\$1,532.16	\$1,116.65	\$240.72	\$232.79	Pass	\$2,568.60	\$1,882.69	\$362.96	\$322.94	Pass	57
62	\$1,243.71	\$716.52	\$210.92	\$316.28	Pass	\$1,950.14	\$1,228.45	\$296.03	\$425.65	Pass	\$3,001.07	\$1,998.11	\$423.23	\$579.73	Pass	62
67	\$1,865.47	\$996.19	\$295.14	\$574.14	Pass	\$2,673.21	\$1,490.11	\$395.71	\$787.39	Pass	\$3,865.25	\$2,213.85	\$545.41	\$1,105.99	Pass	67
72	\$3,163.24	\$1,535.14	\$479.26	\$1,148.84	Pass	\$4,121.70	\$2,004.37	\$602.90	\$1,514.43	Pass	\$5,516.69	\$2,725.51	\$786.64	\$2,004.54	Pass	72
77	\$5,380.15	\$2,561.44	\$815.49	\$2,003.22	Pass	\$6,655.24	\$2,925.35	\$985.52	\$2,744.37	Pass	\$8,624.38	\$3,691.26	\$1,259.36	\$3,673.76	Pass	77

3 Year Benefit Period																
No Inflation Protection						3% Compound Inflation protection					5% Compound Inflation protection					Issue Age
Issue Age	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	
42	\$670.54	\$305.30	\$124.56	\$140.67	Pass	\$1,256.89	\$884.31	\$202.11	\$170.47	Pass	\$2,614.76	\$2,025.77	\$355.64	\$233.36	Pass	42
47	\$697.29	\$391.77	\$139.87	\$165.65	Pass	\$1,395.27	\$985.30	\$219.65	\$190.32	Pass	\$2,685.25	\$2,064.62	\$367.25	\$250.38	Pass	47
52	\$823.96	\$509.59	\$114.95	\$199.42	Pass	\$1,534.22	\$1,116.48	\$162.28	\$255.46	Pass	\$2,756.98	\$2,142.71	\$243.80	\$370.47	Pass	52
57	\$1,014.17	\$673.93	\$179.85	\$160.39	Pass	\$1,796.09	\$1,289.66	\$271.85	\$234.58	Pass	\$3,011.06	\$2,269.92	\$415.15	\$325.99	Pass	57
62	\$1,457.95	\$893.49	\$236.91	\$327.55	Pass	\$2,286.07	\$1,493.02	\$336.69	\$456.35	Pass	\$3,518.03	\$2,407.70	\$485.80	\$624.54	Pass	62
67	\$2,186.81	\$1,234.61	\$335.64	\$616.56	Pass	\$3,133.70	\$1,807.12	\$453.54	\$873.05	Pass	\$4,531.07	\$2,666.69	\$629.02	\$1,235.36	Pass	67
72	\$3,708.14	\$1,890.21	\$551.47	\$1,266.46	Pass	\$4,831.70	\$2,431.09	\$696.40	\$1,704.21	Pass	\$6,466.99	\$3,290.96	\$911.79	\$2,264.24	Pass	72
77	\$6,306.93	\$3,139.57	\$945.57	\$2,221.79	Pass	\$7,801.67	\$3,554.11	\$1,144.88	\$3,102.69	Pass	\$10,110.01	\$4,475.87	\$1,465.87	\$4,168.27	Pass	77

4 Year Benefit Period																
No Inflation Protection						3% Compound Inflation protection					5% Compound Inflation protection					Issue Age
Issue Age	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	
42	\$640.22	\$347.37	\$132.45	\$160.40	Pass	\$1,410.40	\$986.20	\$219.47	\$204.73	Pass	\$2,934.12	\$2,231.70	\$391.74	\$310.68	Pass	42
47	\$782.45	\$445.01	\$149.63	\$187.82	Pass	\$1,565.69	\$1,097.58	\$239.15	\$228.96	Pass	\$3,013.22	\$2,275.36	\$404.78	\$333.09	Pass	47
52	\$924.60	\$577.47	\$121.66	\$225.48	Pass	\$1,721.61	\$1,241.74	\$174.17	\$305.09	Pass	\$3,093.71	\$2,361.30	\$266.24	\$466.17	Pass	52
57	\$1,138.03	\$762.08	\$194.49	\$181.47	Pass	\$2,015.46	\$1,432.99	\$297.72	\$284.75	Pass	\$3,378.82	\$2,502.99	\$458.52	\$417.31	Pass	57
62	\$1,636.02	\$1,006.97	\$258.52	\$370.54	Pass	\$2,565.28	\$1,656.10	\$370.48	\$538.70	Pass	\$3,947.72	\$2,654.18	\$537.80	\$755.73	Pass	62
67	\$2,453.90	\$1,385.15	\$369.31	\$699.44	Pass	\$3,516.44	\$2,001.33	\$501.60	\$1,013.51	Pass	\$5,084.49	\$2,939.37	\$698.52	\$1,446.60	Pass	67
72	\$4,161.04	\$2,112.13	\$611.48	\$1,437.43	Pass	\$5,421.84	\$2,693.74	\$774.11	\$1,953.98	Pass	\$7,256.85	\$3,636.42	\$1,015.80	\$2,604.64	Pass	72
77	\$7,077.24	\$3,498.83	\$1,053.64	\$2,524.78	Pass	\$8,754.55	\$3,942.31	\$1,277.28	\$3,534.96	Pass	\$11,344.82	\$4,960.89	\$1,637.45	\$4,746.48	Pass	77

5 Year Benefit Period																
No Inflation Protection						3% Compound Inflation protection					5% Compound Inflation protection					Issue Age
Issue Age	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	
42	\$691.39	\$391.63	\$138.26	\$161.50	Pass	\$1,523.14	\$1,092.87	\$232.25	\$198.02	Pass	\$3,168.65	\$2,439.54	\$418.34	\$310.77	Pass	42
47	\$844.99	\$500.94	\$156.83	\$187.23	Pass	\$1,690.83	\$1,215.35	\$253.52	\$221.96	Pass	\$3,254.08	\$2,488.67	\$432.44	\$332.96	Pass	47
52	\$998.51	\$648.80	\$126.59	\$223.12	Pass	\$1,859.22	\$1,373.64	\$183.96	\$301.62	Pass	\$3,341.00	\$2,583.78	\$282.75	\$474.47	Pass	52
57	\$1,229.00	\$854.98	\$205.32	\$168.71	Pass	\$2,176.56	\$1,584.57	\$316.85	\$275.15	Pass	\$3,648.90	\$2,741.48	\$490.59	\$416.83	Pass	57
62	\$1,766.79	\$1,127.47	\$274.55	\$364.77	Pass	\$2,770.33	\$1,829.95	\$395.52	\$544.86	Pass	\$4,263.27	\$2,908.89	\$576.34	\$778.04	Pass	62
67	\$2,650.05	\$1,546.96	\$394.38	\$708.71	Pass	\$3,797.52	\$2,210.92	\$537.33	\$1,049.26	Pass	\$5,490.90	\$3,225.12	\$750.19	\$1,515.59	Pass	67
72	\$4,493.64	\$2,355.17	\$656.46	\$1,482.01	Pass	\$5,855.21	\$2,980.58	\$832.19	\$2,042.44	Pass	\$7,836.91	\$4,001.81	\$1,093.54	\$2,741.56	Pass	72
77	\$7,642.94	\$3,896.89	\$1,135.22	\$2,610.83	Pass	\$9,454.32	\$4,368.95	\$1,376.85	\$3,708.52	Pass	\$12,251.63	\$5,478.41	\$1,766.47	\$5,006.75	Pass	77

6 Year Benefit Period																
No Inflation Protection						3% Compound Inflation protection					5% Compound Inflation protection					Issue Age
Issue Age	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	
42	\$729.50	\$425.45	\$142.59	\$161.47	Pass	\$1,607.09	\$1,169.00	\$241.78	\$196.32	Pass	\$3,343.30	\$2,578.24	\$438.16	\$326.91	Pass	42
47	\$891.57	\$543.44	\$162.19	\$185.94	Pass	\$1,784.03	\$1,299.17	\$264.24	\$220.63	Pass	\$3,433.43	\$2,631.67	\$453.06	\$348.71	Pass	47
52	\$1,053.54	\$702.67	\$130.27	\$220.60	Pass	\$1,961.69	\$1,467.14	\$190.80	\$303.76	Pass	\$3,525.15	\$2,733.52	\$295.04	\$496.59	Pass	52
57	\$1,296.74	\$924.83	\$213.39	\$158.52	Pass	\$2,296.53	\$1,691.82	\$331.11	\$273.59	Pass	\$3,850.02	\$2,902.99	\$514.51	\$432.52	Pass	57
62	\$1,864.17	\$1,217.44	\$286.51	\$360.22	Pass	\$2,923.02	\$1,952.75	\$414.21	\$566.07	Pass	\$4,498.25	\$3,082.30	\$605.09	\$810.86	Pass	62
67	\$2,796.11	\$1,667.42	\$413.09	\$715.61	Pass	\$4,006.83	\$2,359.78	\$564.00	\$1,083.05	Pass	\$5,793.55	\$3,421.93	\$788.75	\$1,582.87	Pass	67
72	\$4,741.32	\$2,533.99	\$689.98	\$1,517.36	Pass	\$6,177.94	\$3,184.12	\$875.48	\$2,118.34	Pass	\$8,268.86	\$4,256.56	\$1,151.47	\$2,860.83	Pass	72
77	\$8,064.21	\$4,172.57	\$1,195.82	\$2,695.82	Pass	\$9,975.42	\$4,655.80	\$1,450.85	\$3,868.77	Pass	\$12,926.92	\$5,822.90	\$1,862.36	\$5,241.66	Pass	77

10 Year Benefit Period																
No Inflation Protection						3% Compound Inflation protection					5% Compound Inflation protection					Issue Age
Issue Age	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	
42	\$933.11	\$519.96	\$165.72	\$247.43	Pass	\$2,055.64	\$1,368.39	\$292.67	\$394.59	Pass	\$4,276.43	\$2,925.39	\$544.02	\$807.02	Pass	42
47	\$1,140.41	\$661.64	\$190.84	\$287.94	Pass	\$2,281.96	\$1,518.80	\$321.47	\$441.70	Pass	\$4,391.72	\$2,991.37	\$563.20	\$837.15	Pass	47
52	\$1,347.59	\$852.22	\$149.90	\$345.47	Pass	\$2,509.21	\$1,713.05	\$227.34	\$568.82	Pass	\$4,509.03	\$3,112.92	\$360.71	\$1,035.40	Pass	52
57	\$1,658.67	\$1,118.55	\$256.55	\$283.57	Pass	\$2,937.50	\$1,975.35	\$407.32	\$554.83	Pass	\$4,924.58	\$3,315.01	\$642.27	\$967.30	Pass	57
62	\$2,384.47	\$1,466.38	\$350.40	\$567.70	Pass	\$3,738.85	\$2,280.24	\$514.02	\$944.59	Pass	\$5,753.73	\$3,530.68	\$758.69	\$1,464.36	Pass	62
67	\$3,576.52	\$2,002.53	\$513.01	\$1,060.98	Pass	\$5,125.16	\$2,763.82	\$706.44	\$1,654.89	Pass	\$7,410.55	\$3,942.72	\$994.70	\$2,473.13	Pass	67
72	\$6,064.64	\$3,032.65	\$868.84	\$2,163.16	Pass	\$7,902.23	\$3,743.30	\$1,106.50	\$3,052.43	Pass	\$10,576.74	\$4,940.78	\$1,460.69	\$4,175.27	Pass	72
77	\$10,314.96	\$4,911.96	\$1,519.07	\$3,883.94	Pass	\$12,759.61	\$5,413.85	\$1,845.69	\$5,500.07	Pass	\$16,534.88	\$6,720.09	\$2,374.04	\$7,440.76	Pass	77

Lifetime Benefit Period																	Issue Age
No Inflation Protection						3% Compound Inflation protection					5% Compound Inflation protection						
Issue Age	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail		
42	\$1,088.81	\$555.80	\$183.24	\$349.77	Pass	\$2,398.64	\$1,442.22	\$331.26	\$625.16	Pass	\$4,990.00	\$3,080.49	\$624.32	\$1,285.20	Pass	42	
47	\$1,330.70	\$704.90	\$212.50	\$413.31	Pass	\$2,662.73	\$1,597.89	\$364.80	\$700.05	Pass	\$5,124.53	\$3,146.67	\$646.59	\$1,331.27	Pass	47	
52	\$1,572.45	\$904.97	\$164.88	\$502.61	Pass	\$2,927.90	\$1,798.09	\$255.22	\$874.60	Pass	\$5,261.41	\$3,269.05	\$410.80	\$1,581.57	Pass	52	
57	\$1,935.43	\$1,184.59	\$288.96	\$461.89	Pass	\$3,427.65	\$2,069.75	\$464.66	\$893.24	Pass	\$5,746.30	\$3,477.12	\$738.40	\$1,530.78	Pass	57	
62	\$2,782.35	\$1,544.85	\$398.11	\$839.39	Pass	\$4,362.72	\$2,381.27	\$588.73	\$1,392.72	Pass	\$6,713.80	\$3,693.33	\$873.67	\$2,146.81	Pass	62	
67	\$4,173.30	\$2,095.01	\$587.07	\$1,491.23	Pass	\$5,980.35	\$2,873.22	\$812.35	\$2,294.77	Pass	\$8,647.09	\$4,107.92	\$1,147.84	\$3,391.32	Pass	67	
72	\$7,076.60	\$3,149.27	\$999.94	\$2,927.40	Pass	\$9,220.81	\$3,871.76	\$1,276.79	\$4,072.26	Pass	\$12,341.59	\$5,124.05	\$1,688.62	\$5,528.92	Pass	72	
77	\$12,036.33	\$5,053.75	\$1,754.07	\$5,228.31	Pass	\$14,888.69	\$5,562.25	\$2,134.80	\$7,191.64	Pass	\$19,293.91	\$6,923.91	\$2,748.68	\$9,621.31	Pass	77	

Exhibit 6C  
Gross-to Net Test  
Unisex Rating  
Insured with Covered Partner Discount  
Select Preferred  
Standard Premium Payment Option  
\$170 DBA  
Comprehensive Daily Reimbursement  
90 Service Day Elimination Period  
No Riders

2 Year Benefit Period																
No Inflation Protection						3% Compound Inflation protection					5% Compound Inflation protection					Issue Age
Issue Age	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	
42	\$400.81	\$199.45	\$105.36	\$96.00	Pass	\$882.98	\$594.97	\$159.83	\$128.18	Pass	\$1,836.91	\$1,384.89	\$267.69	\$184.33	Pass	42
47	\$489.85	\$256.36	\$116.11	\$117.38	Pass	\$980.20	\$663.90	\$172.16	\$144.14	Pass	\$1,886.43	\$1,410.92	\$275.85	\$199.65	Pass	47
52	\$578.85	\$334.29	\$98.60	\$145.95	Pass	\$1,077.81	\$753.77	\$131.85	\$192.18	Pass	\$1,936.82	\$1,464.46	\$189.12	\$283.24	Pass	52
57	\$712.47	\$443.20	\$144.20	\$125.08	Pass	\$1,261.78	\$871.83	\$208.83	\$181.12	Pass	\$2,115.31	\$1,550.45	\$309.50	\$255.36	Pass	57
62	\$1,024.23	\$590.07	\$184.28	\$249.88	Pass	\$1,605.99	\$1,011.66	\$254.38	\$339.95	Pass	\$2,471.47	\$1,645.50	\$359.13	\$466.84	Pass	62
67	\$1,536.27	\$820.39	\$253.65	\$462.23	Pass	\$2,201.47	\$1,227.15	\$336.47	\$637.85	Pass	\$3,183.15	\$1,823.17	\$459.75	\$900.23	Pass	67
72	\$2,605.02	\$1,264.23	\$405.27	\$935.52	Pass	\$3,394.34	\$1,650.66	\$507.09	\$1,236.59	Pass	\$4,543.16	\$2,244.54	\$658.41	\$1,640.21	Pass	72
77	\$4,430.71	\$2,109.42	\$682.17	\$1,639.12	Pass	\$5,480.79	\$2,409.12	\$822.19	\$2,249.48	Pass	\$7,102.43	\$3,039.86	\$1,047.71	\$3,014.86	Pass	77

3 Year Benefit Period																
No Inflation Protection						3% Compound Inflation protection					5% Compound Inflation protection					Issue Age
Issue Age	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	
42	\$469.85	\$251.43	\$113.17	\$105.26	Pass	\$1,035.08	\$728.26	\$177.03	\$129.80	Pass	\$2,153.33	\$1,668.28	\$303.47	\$181.59	Pass	42
47	\$574.24	\$322.63	\$125.78	\$125.83	Pass	\$1,149.05	\$811.43	\$191.48	\$146.14	Pass	\$2,211.38	\$1,700.28	\$313.03	\$198.07	Pass	47
52	\$678.56	\$419.67	\$105.25	\$153.64	Pass	\$1,263.47	\$919.45	\$144.23	\$199.79	Pass	\$2,270.46	\$1,764.59	\$211.36	\$294.51	Pass	52
57	\$835.20	\$555.00	\$158.70	\$121.50	Pass	\$1,479.13	\$1,062.08	\$234.46	\$182.60	Pass	\$2,479.70	\$1,869.35	\$352.48	\$257.87	Pass	57
62	\$1,200.66	\$735.81	\$205.69	\$259.16	Pass	\$1,882.64	\$1,229.55	\$287.86	\$365.23	Pass	\$2,897.20	\$1,982.81	\$410.66	\$503.74	Pass	62
67	\$1,800.90	\$1,016.74	\$287.00	\$497.17	Pass	\$2,580.69	\$1,488.21	\$384.09	\$708.39	Pass	\$3,731.47	\$2,196.10	\$528.61	\$1,006.77	Pass	67
72	\$3,053.76	\$1,556.64	\$464.74	\$1,032.38	Pass	\$3,979.05	\$2,002.07	\$584.10	\$1,392.88	Pass	\$5,325.76	\$2,710.20	\$761.48	\$1,854.08	Pass	72
77	\$5,193.94	\$2,585.53	\$789.29	\$1,819.12	Pass	\$6,424.91	\$2,926.91	\$953.43	\$2,544.56	Pass	\$8,325.89	\$3,686.01	\$1,217.78	\$3,422.10	Pass	77

4 Year Benefit Period																
No Inflation Protection						3% Compound Inflation protection					5% Compound Inflation protection					Issue Age
Issue Age	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	
42	\$527.24	\$286.07	\$119.66	\$121.50	Pass	\$1,161.51	\$812.17	\$191.33	\$158.01	Pass	\$2,416.34	\$1,837.87	\$333.20	\$245.27	Pass	42
47	\$644.37	\$366.48	\$133.81	\$144.08	Pass	\$1,289.39	\$903.89	\$207.53	\$177.96	Pass	\$2,481.48	\$1,873.82	\$343.94	\$263.72	Pass	47
52	\$761.44	\$475.56	\$110.78	\$175.10	Pass	\$1,417.79	\$1,022.61	\$154.52	\$240.66	Pass	\$2,547.76	\$1,944.60	\$229.85	\$373.32	Pass	52
57	\$937.20	\$627.59	\$170.75	\$138.86	Pass	\$1,659.79	\$1,180.11	\$255.77	\$223.91	Pass	\$2,782.56	\$2,061.29	\$388.20	\$333.08	Pass	57
62	\$1,347.31	\$829.27	\$223.49	\$294.56	Pass	\$2,112.58	\$1,363.85	\$315.69	\$433.05	Pass	\$3,251.06	\$2,185.80	\$453.48	\$611.78	Pass	62
67	\$2,020.86	\$1,140.71	\$314.72	\$565.42	Pass	\$2,895.89	\$1,648.16	\$423.67	\$824.07	Pass	\$4,187.22	\$2,420.66	\$585.84	\$1,180.73	Pass	67
72	\$3,426.74	\$1,739.40	\$514.16	\$1,173.18	Pass	\$4,465.04	\$2,218.38	\$648.09	\$1,598.57	Pass	\$5,976.23	\$2,994.70	\$847.13	\$2,134.41	Pass	72
77	\$5,828.32	\$2,881.39	\$878.29	\$2,068.64	Pass	\$7,209.63	\$3,246.61	\$1,062.47	\$2,900.55	Pass	\$9,342.79	\$4,085.44	\$1,359.08	\$3,898.28	Pass	77

5 Year Benefit Period																
No Inflation Protection						3% Compound Inflation protection					5% Compound Inflation protection					Issue Age
Issue Age	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	
42	\$569.38	\$322.52	\$124.45	\$122.41	Pass	\$1,254.35	\$900.01	\$201.85	\$152.49	Pass	\$2,609.48	\$2,009.03	\$355.10	\$245.34	Pass	42
47	\$695.88	\$412.54	\$139.74	\$143.60	Pass	\$1,392.45	\$1,000.88	\$219.37	\$172.20	Pass	\$2,679.83	\$2,049.49	\$366.72	\$263.62	Pass	47
52	\$822.30	\$534.30	\$114.84	\$173.15	Pass	\$1,531.12	\$1,131.23	\$162.08	\$237.80	Pass	\$2,751.41	\$2,127.82	\$243.44	\$380.15	Pass	52
57	\$1,012.12	\$704.10	\$179.67	\$128.35	Pass	\$1,792.46	\$1,304.94	\$271.52	\$216.00	Pass	\$3,004.98	\$2,257.69	\$414.61	\$332.69	Pass	57
62	\$1,455.00	\$928.51	\$236.69	\$289.81	Pass	\$2,281.45	\$1,507.02	\$336.31	\$438.12	Pass	\$3,510.92	\$2,395.56	\$485.22	\$630.15	Pass	62
67	\$2,182.39	\$1,273.97	\$335.37	\$573.06	Pass	\$3,127.37	\$1,820.76	\$453.10	\$853.51	Pass	\$4,521.92	\$2,655.98	\$628.39	\$1,237.55	Pass	67
72	\$3,700.64	\$1,939.55	\$551.20	\$1,209.89	Pass	\$4,821.94	\$2,454.60	\$695.92	\$1,671.42	Pass	\$6,453.92	\$3,295.61	\$911.15	\$2,247.17	Pass	72
77	\$6,294.19	\$3,209.20	\$945.47	\$2,139.51	Pass	\$7,785.91	\$3,597.96	\$1,144.46	\$3,043.48	Pass	\$10,089.58	\$4,511.63	\$1,465.33	\$4,112.62	Pass	77

6 Year Benefit Period																
No Inflation Protection						3% Compound Inflation protection					5% Compound Inflation protection					Issue Age
Issue Age	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	
42	\$600.77	\$350.37	\$128.01	\$122.38	Pass	\$1,323.49	\$962.71	\$209.70	\$151.08	Pass	\$2,753.31	\$2,123.26	\$371.42	\$258.63	Pass	42
47	\$734.23	\$447.54	\$144.15	\$142.54	Pass	\$1,469.20	\$1,069.90	\$228.19	\$171.10	Pass	\$2,827.53	\$2,167.26	\$383.70	\$276.58	Pass	47
52	\$867.62	\$578.67	\$117.87	\$171.08	Pass	\$1,615.51	\$1,208.23	\$167.71	\$239.57	Pass	\$2,903.06	\$2,251.14	\$253.56	\$398.37	Pass	52
57	\$1,067.90	\$761.62	\$186.33	\$119.95	Pass	\$1,891.26	\$1,393.27	\$283.27	\$214.72	Pass	\$3,170.61	\$2,390.70	\$434.30	\$345.60	Pass	57
62	\$1,535.20	\$1,002.60	\$246.54	\$286.07	Pass	\$2,407.20	\$1,608.14	\$351.70	\$447.35	Pass	\$3,704.44	\$2,538.36	\$508.90	\$657.18	Pass	62
67	\$2,302.68	\$1,373.17	\$350.78	\$578.74	Pass	\$3,299.74	\$1,943.35	\$475.06	\$881.33	Pass	\$4,771.16	\$2,818.06	\$660.15	\$1,292.95	Pass	67
72	\$3,904.62	\$2,086.81	\$578.80	\$1,239.00	Pass	\$5,087.72	\$2,622.22	\$731.57	\$1,733.93	Pass	\$6,809.65	\$3,505.40	\$958.86	\$2,345.39	Pass	72
77	\$6,641.11	\$3,436.23	\$995.38	\$2,209.50	Pass	\$8,215.05	\$3,834.19	\$1,205.40	\$3,175.46	Pass	\$10,645.70	\$4,795.33	\$1,544.30	\$4,306.07	Pass	77

10 Year Benefit Period																
No Inflation Protection						3% Compound Inflation protection					5% Compound Inflation protection					Issue Age
Issue Age	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	
42	\$768.44	\$428.20	\$147.06	\$193.18	Pass	\$1,692.88	\$1,126.91	\$251.61	\$314.36	Pass	\$3,521.77	\$2,409.15	\$458.61	\$654.01	Pass	42
47	\$939.16	\$544.88	\$167.75	\$226.54	Pass	\$1,879.26	\$1,250.77	\$275.33	\$353.16	Pass	\$3,616.71	\$2,463.48	\$474.40	\$678.83	Pass	47
52	\$1,109.78	\$701.83	\$134.04	\$273.91	Pass	\$2,066.41	\$1,410.75	\$197.81	\$457.85	Pass	\$3,713.32	\$2,563.58	\$307.64	\$842.10	Pass	52
57	\$1,365.96	\$921.16	\$221.86	\$222.94	Pass	\$2,419.12	\$1,626.76	\$346.03	\$446.33	Pass	\$4,055.54	\$2,730.01	\$539.52	\$786.01	Pass	57
62	\$1,963.68	\$1,207.60	\$299.15	\$456.93	Pass	\$3,079.05	\$1,877.84	\$433.90	\$767.31	Pass	\$4,738.37	\$2,907.62	\$635.40	\$1,195.35	Pass	62
67	\$2,945.37	\$1,649.14	\$433.07	\$863.16	Pass	\$4,220.72	\$2,276.09	\$592.36	\$1,352.26	Pass	\$6,102.81	\$3,246.95	\$829.75	\$2,026.11	Pass	67
72	\$4,994.41	\$2,497.48	\$726.10	\$1,770.83	Pass	\$6,507.72	\$3,082.72	\$921.82	\$2,503.18	Pass	\$8,710.26	\$4,068.88	\$1,213.51	\$3,427.87	Pass	72
77	\$8,494.67	\$4,045.14	\$1,261.58	\$3,187.95	Pass	\$10,507.91	\$4,458.46	\$1,530.57	\$4,518.88	Pass	\$13,616.96	\$5,534.19	\$1,965.68	\$6,117.09	Pass	77

Lifetime Benefit Period																	Issue Age
No Inflation Protection						3% Compound Inflation protection					5% Compound Inflation protection						
Issue Age	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail		
42	\$896.67	\$457.72	\$161.49	\$277.46	Pass	\$1,975.35	\$1,187.71	\$283.39	\$504.25	Pass	\$4,109.42	\$2,536.87	\$524.73	\$1,047.81	Pass	42	
47	\$1,095.87	\$580.50	\$185.59	\$329.78	Pass	\$2,192.84	\$1,315.91	\$311.01	\$565.92	Pass	\$4,220.20	\$2,591.37	\$543.07	\$1,085.75	Pass	47	
52	\$1,294.96	\$745.27	\$146.37	\$403.32	Pass	\$2,411.21	\$1,480.78	\$220.77	\$709.67	Pass	\$4,332.93	\$2,662.16	\$348.90	\$1,291.88	Pass	52	
57	\$1,593.89	\$975.54	\$248.55	\$369.79	Pass	\$2,822.77	\$1,704.50	\$393.25	\$725.02	Pass	\$4,732.25	\$2,893.51	\$618.68	\$1,250.05	Pass	57	
62	\$2,291.35	\$1,272.23	\$338.44	\$680.67	Pass	\$3,592.83	\$1,961.05	\$495.43	\$1,136.36	Pass	\$5,529.02	\$3,041.56	\$730.08	\$1,757.37	Pass	62	
67	\$3,436.84	\$1,725.30	\$494.06	\$1,217.48	Pass	\$4,924.99	\$2,366.18	\$679.59	\$1,879.22	Pass	\$7,121.13	\$3,383.00	\$955.87	\$2,782.26	Pass	67	
72	\$5,827.79	\$2,593.51	\$834.06	\$2,400.21	Pass	\$7,593.61	\$3,188.50	\$1,062.07	\$3,343.04	Pass	\$10,163.66	\$4,219.81	\$1,401.21	\$4,542.64	Pass	72	
77	\$9,912.11	\$4,161.91	\$1,455.11	\$4,295.08	Pass	\$12,261.27	\$4,580.68	\$1,768.66	\$5,911.94	Pass	\$15,889.10	\$5,702.05	\$2,274.21	\$7,912.85	Pass	77	

Massachusetts Mutual Life Insurance Company  
Actuarial Memorandum  
Individual Long Term Care Insurance  
Policy Forms: MM501-P-1-VA, et al

1. Purpose and Scope

The purpose of this filing is to update the new business premium rates for the company's currently marketed Individual Facility Only insurance policy form. Premium rates are being updated to reflect industry experience as reported in the Intercompany Study 1984-2004 published by the Society of Actuaries Long Term Care Experience Committee (2004 Study). The company's currently marketed policy forms will be re-numbered as a result of the new business premium rate change. The re-numbered policy forms are identical to the forms they are replacing. These forms offer individual Facility Only Insurance on a participating basis that is individually underwritten and issued. The following is a list of the proposed forms being filed on a nationwide basis. Please note that a state specific suffix may be added to the forms listed below.

Item	Form Number
Facility Only LTC Policy	MM501-P-1
Compound Inflation Protection Rider	MM500R-COMP-1
Restoration of Benefit Rider	MM500R-ROB-1
Non-Forfeiture Rider	MM500R-SBN-1
Return of Premium	MM500R-ROP-1
Full Return of Premium Rider	MM500R-FROP-1
Covered Partner Waiver of Premium Rider	MM500R-WOP-1
Paid-Up Survivorship Rider	MM500R-SVR-1
Shared Care Rider	MM500R-SCB-1
10-Year Paid –Up Premium Option	MME-10P-1
Paid – Up at 65 Premium Option	MME-P65-1
Discounted Renewal Premium Option	N/A

2. Benefit Description

These forms provide individual Long Term Care Insurance that is intended to comply with Internal Revenue Code Section 7702B(b), and are therefore intended to qualify for the tax treatment enacted as a part of the 1996 HealthCare Reform legislation.

Facility Only Policy

This policy provides daily reimbursement of the costs associated with qualified long term care services provided in a facility setting pursuant to a plan of care, up to a specified daily benefit amount. The total of all benefits paid under the policy is subject to a specified total benefit amount that is administered as a "pool of money".

Benefit Amounts:

Massachusetts Mutual Life Insurance Company  
Actuarial Memorandum  
Individual Long Term Care Insurance  
Policy Forms: MM501-P-1-VA, et al

The Daily Benefit Amount at issue is subject to a minimum of \$50 and may be purchased in \$10 increments.

The total benefit options available are 730, 1095, 1460, 1825, 2190, 3650 times the daily benefit amount as well as an option for an unlimited total benefit amount.

Elimination Period:

To receive benefits for services provided within the U.S., its territories and possessions, and Canada a chronically ill insured must satisfy the policy elimination period. The elimination period options are 30, 60, 90, and 180 service days. This requirement need only be satisfied once during the lifetime of the policy. Service days used to satisfy this requirement may be accumulated from separate claims. This requirement may also be satisfied by the receipt of services outside of the United States, its territories or possessions and Canada.

To receive benefits for services provided outside of the U.S., its territories and possessions, and Canada a chronically ill individual must first satisfy the policy's elimination period and then satisfy an additional per occurrence elimination period. The elimination period for coverage outside of the United States is equal to the policy elimination period.

Other Policy Benefits:

Facility Prescription Drug Benefit – pays up to 1 times the DBA per month for prescriptions drugs while confined in a facility

Facility Bed Reservation Benefit – pays up to 60 times the DBA per policy year for facility bed reservation

Personal Care Advisor Benefit – Optional Benefit meant to assist the insured during the claim process. Does not count against the total benefit amount

Coverage Outside of the United States – provides benefits for services provided outside the US, its territories or possessions, and Canada. The maximum daily benefit is 50% of DBA. The maximum amount that may be received under this benefit is limited to 25% of the policy's total benefit amount. If the policy has an unlimited benefit amount then the maximum for this benefit is 3,650 times the DBA times 50%.

Waiver of Premium – waives the policy premium after satisfaction of the elimination period and while benefits are being paid.

Contingent Non-Forfeiture – provides a non-forfeiture benefit in the event that an insured lapses their coverage as a result of a substantial increase in the policy premium

#### Benefit Riders

Compound Inflation Protection Rider – inflates the DBA by an amount chosen at issue (3% or 5%) each year. The unused portion of all other benefit amounts is increased in proportion to the increase in the DBA.

Restoration of Benefit Rider – if the insured recovers prior to exhausting the total benefit amount the total benefit amount will be restored to the level it would have been if benefits had not been paid. Benefits may be restored more than once. However, the total amount that can be restored over the life of the policy is an amount equivalent to the original total benefit of the policy.

Non-Forfeiture Rider – NAIC Shortened Benefit Period

Return of Premium Rider – if the insured dies while the policy is in force all premiums paid for the policy less any claims paid under the policy will be returned to insured's beneficiary

Full Return of Premium Rider – if the insured dies while the policy is in force all premiums paid for the policy will be returned to the insured's beneficiary.

Covered Partner Waiver of Premium – waives the policy premium when the covered partner's premium is waived on their policy.

Paid-Up Survivorship – if the insured's covered partner dies the insured's policy will be paid-up on the later of the 10<sup>th</sup> policy anniversary or the date of the covered partner's death.

Shared Care – establishes a third benefit pool that is available to the insured and their covered partner once they have exhausted the total benefit amount of their policy

#### Premium Payment Options

10-Year Paid Up Premium Option – policy is paid-up on the 10th policy anniversary

Paid-Up at Age 65 Premium Option – policy is paid-up on the anniversary the insured attains insurance age 65 (not available above issue age 55).

Discounted Renewal Premium Option – Insured agrees to pay a higher 1<sup>st</sup> year premium in return for discounted renewal premiums.

#### Dividends

The policy is a participating policy. Explicit dividend margin has been incorporated into the premium rates for this product. The dividend margin

will be released as policy experience emerges. Dividends are not guaranteed and the company does not intend to credit a dividend until the insured attains insurance age 65 and the policy has been in force for 10 years. Dividends will be used to reduce future premiums. If a policy is not in premium paying status the dividends will be accumulated and paid upon policy termination.

3. Renewability

The proposed forms are guaranteed renewable for life of the insured.

4. Applicability

The rates are being filed on a nationwide basis and will be marketed to new policyholders upon approval and when made available in your state.

5. Morbidity

Sample claim costs are provided in Exhibit 2.

The claim incidence assumption is derived using industry experience as reported in the 2004 study adjusted, to the extent credible, by the aggregate experience of the company's reinsurer.

The claim termination assumption is derived using industry experience as reported in the 2004 study.

The benefit utilization assumptions are derived using the following:

- Industry experience as reported in the 2004 study.
- CPI data for Nursing Home and Adult Day Care Services
- CPI data for Care of Invalids and Elderly at Home
- Various cost of care surveys published by the long term care insurance industry
- The company's actual distribution of daily benefits amounts by state and issue year of company's individual long term care business

6. Mortality

Active life mortality rates are provided in Exhibit 3. The mortality assumption is derived using industry experience as reported in the 2004 study.



Massachusetts Mutual Life Insurance Company  
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7. Lapse Rates

Lapse rates are provided in Exhibit 4. The basis of the lapse assumption is derived from the actual experience of the company's individual long term care business.

8. Expenses

The expense assumptions are derived from the actual expenses to be allocated to the company's individual long term care business for the 2011 calendar year. Sales Expenses (percent of premium)

Policy Year	Writing Agent Commissions		Other Sales Expense
	Multi-Life = No	Multi-Life = Yes	
1	50%	40%	103.75%
2	6%	6%	1.5%
3	6%	6%	1.2%
4 to 10	6%	6%	1.0%
11+	1%	1%	0.3%

Administrative and Overhead Expenses

Issue Age	Per Policy Issued	Per Policy In Force	Percent of Premium*	Percent of Paid Claims
<40	\$651	\$5 per month	6%	5%
40 to 44	\$651	\$5 per month	6%	5%
45 to 49	\$669	\$5 per month	6%	5%
50 to 54	\$669	\$5 per month	6%	5%
55 to 59	\$703	\$5 per month	6%	5%
60 to 64	\$740	\$5 per month	6%	5%
65 to 69	\$880	\$5 per month	6%	5%
70 to 74	\$1331	\$5 per month	6%	5%
75 to 79	\$1960	\$5 per month	6%	5%
80+	\$2495	\$5 per month	6%	5%

\* includes premium tax

9. Marketing Method

These forms are intended to be sold through the company's career agency system. This include company career agents and independent brokers contracting through one of the company's general agencies

#### 10. Underwriting

All applicants are required to submit an application containing a medical history questionnaire. For applicants less than 70 years old the company will perform a phone health interview. The phone health interview includes a cognitive screen for applicants aged 65 and older. For applicants aged 70 and above the company will perform a face to face interview including a cognitive screen. The company will request an attending physician statement for all applicants. Additional tests including a paramedical exam may be ordered at the underwriter's discretion.

#### 11. Premium Classes

The company has 5 underwriting classes:

Underwriting Class	Rate Level
Ultra Preferred	90% of the Base Rate
Select Preferred	100% of the Base Rate
Preferred	125% of the Base Rate
Standard Plus	250% of the Base Rate
Standard	500% of the Base Rate

Discounts Available:

- 30% Spouse/Partner Discount - Both spouses/partners must be covered.
- 15% Spouse/Partner Discount – One spouse/partner is covered.
- 10% Multi-Life Discount – members of an employer group or association
- 5% Multi-Product Discount – owns another company protection product

Base Premium Rates, Premium factors, and a sample premium calculation are attached as Exhibits 1a, 1b, and 1c.

#### 12. Issue Age Range

Subject to underwriting requirements, coverage is available to those aged 18 to 84 at issue.

#### 13. Area Factors

Area factors were not used in the pricing of these policy forms.

14. Average Annual Premium

The estimated average annual premium, based on the anticipated mix of business including all riders and options, is \$2,750.

15. Anticipated Loss Ratio

Under the NAIC Model Law for Long Term Care Insurance there is no minimum required loss ratio for the initial filing of new business premium rates.

The anticipated lifetime loss ratio under moderately adverse experience is 65% for anticipated mix of business with the standard premium payment option. A durational loss ratio exhibit is attached as Exhibit 5.

The anticipated loss ratio was calculated as the present value of incurred claims divided by the difference between the present value of earned premiums and the present value of anticipated dividends. Anticipated dividends are based on the company's 2011 dividend scale. Present values were calculated at the maximum valuation interest rate (4.00% for 2011).

16. Distribution of Business

Issue Age Range	Percent of Policies Issued
<40	2%
40 to 44	3%
45 to 49	7%
50 to 54	18%
55 to 59	29%
60 to 64	25%
65 to 69	11%
70 to 74	3%
75 to 79	1%
80 to 84	1%

Partner Status	Percent of Policies Issued
Single	21%
Partner – One Policy	13%
Partner – Two Policies	66%

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Underwriting Class	Percent of Policies Issued
Ultra Preferred	45%
Select Preferred	45%
Preferred	9%
Standard Plus	1%
Standard	<0.1%

Elimination Period	Percent of Policies Issued
30 Day	3%
60 Day	3%
90 Day	87%
180 Day	7%

Total Benefit Amount	Percent of Policies Issued
730 times the DBA	5%
1,095 times the DBA	19%
1,460 times the DBA	11%
1,825 times the DBA	26%
2,190 times the DBA	9%
3,650 times the DBA	5%
Unlimited	25%

Inflation Protection Option	Percent of Policies Issued
None	12%
Compound 3%	53%
Compound 5%	35%

Premium Payment Period	Percent of Policies Issued
Life of the Policy	89%
10 Year	9%
To Age 65	2%

Rider Take Rates	
Rider	Percent of Eligible Policies
Full Return of Premium	<0.5%
Return of Premium Less Claims	1%
Non-Forfeiture	1%
Shared Care	22%
Joint Waiver of Premium	54%
Paid-Up Survivorship	3%

## 17. Contingency and Risk Margins

For business with the standard premium option, the anticipated lifetime loss ratio using best estimate assumptions before dividends is 55.1%. The anticipated lifetime loss ratio under moderately adverse experience before dividends is 59.8%. On a present value basis, the company's 2011 dividend scale is equal to 8.0% of premium. If dividends are treated as a reduction in premium, the anticipated loss ratio under moderately adverse experience after dividends is  $65.0\% = 59.8\% / (100\% - 8.0\%)$

- Total margin as a percent of premium is  $9.9\% = 65.0\% - 55.1\%$
- Total margin as a percent of claims is  $18.0\% = 65.0\% / 55.1\% - 100\%$

The contingency and risk margins incorporated into the limited premium payment options are significantly larger reflecting the additional risk associated with these premium options.

## 18. Proposed Effective Date

The premium rates are being filed on a nationwide basis and will be implemented when a sufficient number of states have approved the forms, rates, and advertising to allow for an efficient product roll-out. This is not anticipated to occur before October 31, 2011

### **Actuarial Certification**

I, Kevin B. Waterman, FSA, MAAA, am a member of the American Academy of Actuaries. I meet the Academy's qualification standards for rendering this opinion and am familiar with the requirements for filing long term care insurance premiums.

To the best of my knowledge and judgment

- This Certification is in compliance with applicable laws, regulations, and rules of the jurisdiction in which the filing is made;
- I have complied with all applicable Actuarial Standards of Practice.
- I recognize that the certification is a prescribed statement of actuarial opinion.

Further, in making this certification I make the following statements:

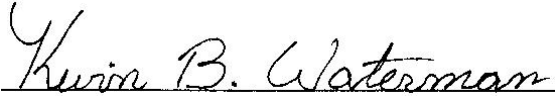
- The initial premium rate schedule is sufficient to cover anticipated costs under moderately adverse experience and the premium rate schedule is reasonably expected to be sustainable over the life of the form with no future premium increases anticipated.
- I have reviewed and taken into consideration the policy design and coverage provided.
- I have reviewed and taken into consideration the company's current underwriting and claims adjudication processes.
- The premium rate schedule is not less than the premium rate schedule for currently marketed policy forms.

#### **Contract Reserves**

- Contract Reserves are calculated in accordance with minimum reserve standards for long term care insurance using a 1 year full preliminary term methodology.
- Contract reserves are equal to 105% of a tabular reserve calculated using the following assumptions:
  - 105% of Claim Incidence assumed in Pricing
  - 95% of Claim Termination assumed in Pricing
  - 95% of Mortality assumed in Pricing

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- 80% of Lapse rates assumed in pricing for policy years 1 through 4 subject to a maximum of 6% in the 1<sup>st</sup> policy year and 4% in policy years 2 through 4.
  - 100% of Lapse Rates assumed in pricing for policy years 5+ subject to a maximum of 2%.
  - The maximum valuation interest rate (4% for 2011 issues)
- Contract reserves contain reasonable margins for adverse experience.
  - The net valuation premium for renewal years does not increase.
  - The difference between the gross premium and the net valuation premium for renewal years is sufficient to cover the expected renewal expenses. Test results are provided in Exhibits 6a, 6b, and 6c.



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## Exhibit 1a

Base Premium Rates and Premium Rate Factors								
Issue Age	Annual Base Rate Per \$10 DBA		Premium Payment Option			Inflation Protection		
		Facility Only	Standard	10-Year Paid-Up	Paid-Up At 65	None	3% Compound	5% Compound
18		\$59.36	1.000	3.269	1.811	1.000	2.333	6.256
19		\$59.36	1.000	3.269	1.811	1.000	2.333	6.195
20		\$59.36	1.000	3.269	1.811	1.000	2.333	6.135
21		\$59.36	1.000	3.269	1.811	1.000	2.333	6.075
22		\$59.36	1.000	3.269	1.811	1.000	2.333	6.016
23		\$59.36	1.000	3.269	1.811	1.000	2.333	5.957
24		\$59.36	1.000	3.269	1.811	1.000	2.333	5.899
25		\$59.36	1.000	3.269	1.811	1.000	2.333	5.842
26		\$59.36	1.000	3.269	1.811	1.000	2.333	5.785
27		\$59.36	1.000	3.269	1.811	1.000	2.333	5.728
28		\$59.36	1.000	3.269	1.811	1.000	2.333	5.673
29		\$59.36	1.000	3.269	1.811	1.000	2.333	5.617
30		\$59.36	1.000	3.269	1.811	1.000	2.333	5.563
31		\$59.36	1.000	3.269	1.811	1.000	2.333	5.508
32		\$59.36	1.000	3.269	1.811	1.000	2.333	5.455
33		\$59.36	1.000	3.269	1.811	1.000	2.333	5.401
34		\$59.36	1.000	3.269	1.811	1.000	2.333	5.349
35		\$59.36	1.000	3.269	1.811	1.000	2.333	5.296
36		\$59.36	1.000	3.269	1.811	1.000	2.333	5.245
37		\$59.36	1.000	3.269	1.811	1.000	2.333	5.193
38		\$59.36	1.000	3.269	1.811	1.000	2.333	5.143
39		\$59.36	1.000	3.269	1.811	1.000	2.333	5.092
40		\$59.36	1.000	3.269	1.811	1.000	2.333	5.043
41		\$61.66	1.000	3.269	1.811	1.000	2.267	4.808
42		\$64.05	1.000	3.269	1.811	1.000	2.203	4.583
43		\$66.90	1.000	3.221	1.856	1.000	2.156	4.412
44		\$69.74	1.000	3.173	1.901	1.000	2.112	4.254
45		\$72.58	1.000	3.126	1.946	1.000	2.072	4.110
46		\$75.43	1.000	3.079	1.990	1.000	2.035	3.975
47		\$78.28	1.000	3.033	2.033	1.000	2.001	3.851
48		\$81.12	1.000	2.991	2.115	1.000	1.969	3.736
49		\$83.96	1.000	2.950	2.196	1.000	1.940	3.629
50		\$86.81	1.000	2.909	2.277	1.000	1.912	3.528
51		\$89.65	1.000	2.869	2.356	1.000	1.886	3.434
52		\$92.50	1.000	2.829	2.435	1.000	1.862	3.346
53		\$96.76	1.000	2.779	2.521	1.000	1.841	3.257
54		\$101.04	1.000	2.730	2.604	1.000	1.821	3.176
55		\$105.31	1.000	2.684	2.684	1.000	1.803	3.102
56		\$109.58	1.000	2.639	NA	1.000	1.786	3.033
57		\$113.85	1.000	2.595	NA	1.000	1.771	2.969
58		\$123.81	1.000	2.527	NA	1.000	1.717	2.822
59		\$133.77	1.000	2.463	NA	1.000	1.672	2.697
60		\$143.74	1.000	2.403	NA	1.000	1.632	2.589
61		\$153.71	1.000	2.346	NA	1.000	1.598	2.495
62		\$163.67	1.000	2.293	NA	1.000	1.568	2.413
63		\$180.03	1.000	2.205	NA	1.000	1.531	2.320
64		\$196.39	1.000	2.126	NA	1.000	1.501	2.243
65		\$212.76	1.000	2.054	NA	1.000	1.475	2.177
66		\$229.13	1.000	1.990	NA	1.000	1.452	2.121
67		\$245.49	1.000	1.931	NA	1.000	1.433	2.072
68		\$279.64	1.000	1.852	NA	1.000	1.394	1.974
69		\$313.80	1.000	1.784	NA	1.000	1.364	1.898
70		\$347.96	1.000	1.725	NA	1.000	1.340	1.837
71		\$382.12	1.000	1.674	NA	1.000	1.320	1.786
72		\$416.27	1.000	1.629	NA	1.000	1.303	1.744
73		\$474.61	1.000	1.581	NA	1.000	1.283	1.702
74		\$532.97	1.000	1.542	NA	1.000	1.268	1.669
75		\$591.31	1.000	1.509	NA	1.000	1.256	1.643
76		\$649.66	1.000	1.482	NA	1.000	1.245	1.621
77		\$708.01	1.000	1.458	NA	1.000	1.237	1.603
78		\$801.23	1.000	1.414	NA	1.000	1.227	1.584
79		\$894.45	1.000	1.378	NA	1.000	1.219	1.569
80		\$987.67	1.000	1.348	NA	1.000	1.212	1.557
81		\$1,080.89	1.000	1.323	NA	1.000	1.207	1.547
82		\$1,174.11	1.000	1.302	NA	1.000	1.202	1.539
83		\$1,267.32	1.000	1.284	NA	1.000	1.198	1.532
84		\$1,360.54	1.000	1.268	NA	1.000	1.195	1.526



Exhibit 1b

Additional Premium Rate Factors					
Issue Age	Non Forfeiture	Oher Riders		Joint Waiver	Paid-Up Survivor
		Return of Premium Less Clms	Full		
18	1.100	1.250	1.470	1.010	1.065
19	1.100	1.250	1.470	1.010	1.065
20	1.100	1.250	1.470	1.010	1.065
21	1.100	1.250	1.470	1.010	1.065
22	1.100	1.250	1.470	1.010	1.065
23	1.100	1.250	1.470	1.010	1.065
24	1.100	1.250	1.470	1.010	1.065
25	1.100	1.250	1.470	1.010	1.065
26	1.100	1.250	1.470	1.010	1.065
27	1.100	1.250	1.470	1.010	1.065
28	1.100	1.250	1.470	1.010	1.065
29	1.100	1.250	1.470	1.010	1.065
30	1.100	1.250	1.470	1.010	1.065
31	1.100	1.250	1.470	1.010	1.065
32	1.100	1.250	1.470	1.010	1.065
33	1.100	1.250	1.470	1.010	1.065
34	1.100	1.250	1.470	1.010	1.065
35	1.100	1.250	1.470	1.010	1.065
36	1.100	1.250	1.470	1.010	1.065
37	1.100	1.250	1.470	1.010	1.065
38	1.100	1.250	1.470	1.010	1.065
39	1.100	1.250	1.470	1.010	1.065
40	1.100	1.250	1.470	1.010	1.065
41	1.100	1.240	1.490	1.010	1.068
42	1.100	1.255	1.510	1.010	1.070
43	1.100	1.272	1.543	1.010	1.072
44	1.100	1.289	1.576	1.010	1.074
45	1.100	1.306	1.609	1.010	1.076
46	1.100	1.323	1.642	1.010	1.078
47	1.100	1.340	1.675	1.010	1.080
48	1.100	1.360	1.729	1.010	1.084
49	1.100	1.380	1.783	1.010	1.088
50	1.100	1.400	1.837	1.010	1.092
51	1.100	1.420	1.891	1.010	1.096
52	1.100	1.440	1.945	1.010	1.100
53	1.100	1.468	2.034	1.010	1.104
54	1.100	1.496	2.123	1.010	1.108
55	1.100	1.524	2.212	1.010	1.112
56	1.100	1.552	2.301	1.010	1.116
57	1.100	1.580	2.390	1.010	1.120
58	1.100	1.617	2.551	1.010	1.124
59	1.100	1.654	2.712	1.010	1.128
60	1.100	1.691	2.873	1.010	1.132
61	1.100	1.728	3.034	1.010	1.136
62	1.100	1.765	3.195	1.010	1.140
63	1.100	1.817	3.569	1.012	1.142
64	1.100	1.869	3.943	1.014	1.144
65	1.100	1.921	4.317	1.016	1.146
66	1.100	1.973	NA	1.018	1.148
67	1.100	2.025	NA	1.020	1.150
68	1.100	2.101	NA	1.022	1.150
69	1.100	2.177	NA	1.024	1.150
70	1.100	2.253	NA	1.026	1.150
71	1.100	2.329	NA	1.028	1.150
72	1.100	2.405	NA	1.030	1.150
73	1.100	2.521	NA	1.036	1.150
74	1.100	2.637	NA	1.042	1.150
75	1.100	2.753	NA	1.048	1.150
76	1.100	2.869	NA	1.054	1.150
77	1.100	2.985	NA	1.060	1.150
78	1.100	3.170	NA	1.066	1.150
79	1.100	3.355	NA	1.072	1.150
80	1.100	3.541	NA	1.078	1.150
81	1.100	3.726	NA	1.084	1.150
82	1.100	3.911	NA	1.090	1.150
83	1.100	4.361	NA	1.096	1.150
84	1.100	4.811	NA	1.102	1.150

Couples Status		Discount	Factor
Single		0%	1.000
Partner		15%	0.850
Covered Partnber		30%	0.700

Underwriting Class		Factor
Ultra Preferred		0.900
Select Preferred		1.000
Preferred		1.250
Standard Plus		2.500
Standard		5.000

Discount		Discount	Factor
Multi-Life Discount		10%	0.900

Benefit Model		Factor
Daily Reimbursement		1.000
Monthly Reimbursement		1.045

Elimination Period	Factor		
30 Day	1.200		
60 Day	1.100		
90 Day	1.000		
180 Day	0.900		

Benefit Period	Factor	Restoration of Benefits	Shared Care
2 Year	0.447	1.040	1.300
3 Year	0.524	1.040	1.260
4 Year	0.588	1.040	1.260
5 Year	0.635	1.040	1.280
6 Year	0.670	1.040	1.300
10 Year	0.857	1.040	1.090
Lifetime	1.000	NA	NA

Discounted Renewal Premium Option		
First Year Premium Factor		3.650
Renewal Year Premium Factor		0.750

Modal Factors		Factor
Annual		1.000
Semi-Annual		0.520
Quarterly		0.265
Monthly-PAC		0.088

# Exhibit 1c

## Premium Calculation Example

	Issue Age 57 - Comprehensive Base Rate	\$113.85
times	Ultra Preferred Rate Class	0.900
times	Covered Partner Discount	0.700
times	Multi-Life Discount	0.900
times	Loyal Customer Discount	0.950
times	DBA Units	20.000
times	10-Year Paid-Up Premium Option	2.595
times	30 Day Elimination Period	1.200
times	6 Year Benefit Period	0.670
times	Compound Inflation Protection (3%) Rider	1.771
times	Restoration of Benefits Rider	1.040
times	Nonforfeiture Benefit Rider	1.100
times	Return of Premium Rider	1.580
times	Cov Part Premium Waiver Rider	1.010
times	Paid-Up Survivorship Rider	1.120
times	Shared Care Rider	1.300
times	Semi-Annual Premium Mode	0.520
equals	*Modal Premium	\$6,263.99

\* Actual result may differ slightly due to rounding

Exhibit 2  
Sample Claim Costs  
Single Insured  
Unisex  
Select Preferred Rate Class  
Standard Premium Payment Option  
Daily Reimbursement  
90 Service Day Elimination Period  
Lifetime Benefit Period  
No Inflation Protection

	Claim Cost per \$1 of DBA								
Policy Duration	Issue Age							Policy Duration	
	42	47	52	57	62	67	72	77	
0	0.16	0.21	0.29	0.38	0.55	1.07	2.45	6.04	0
1	0.17	0.23	0.31	0.41	0.65	1.31	3.39	7.79	1
2	0.18	0.25	0.32	0.44	0.75	1.51	4.49	9.91	2
3	0.17	0.26	0.32	0.47	0.86	2.95	6.68	15.61	3
4	0.19	0.28	0.35	0.51	0.97	3.34	8.67	18.84	4
5	0.21	0.29	0.38	0.55	1.08	4.09	9.58	20.20	5
6	0.23	0.31	0.41	0.65	1.31	3.69	11.31	22.66	6
7	0.25	0.32	0.44	0.75	1.51	4.33	11.12	25.26	7
8	0.26	0.32	0.47	0.85	2.58	6.04	15.48	27.07	8
9	0.28	0.35	0.51	0.97	2.82	6.51	15.99	28.30	9
10	0.29	0.38	0.55	1.07	3.02	6.29	16.17	28.33	10
11	0.31	0.41	0.65	1.31	3.70	7.35	17.28	37.33	11
12	0.32	0.44	0.74	1.51	4.35	8.47	21.48	42.33	12
13	0.32	0.47	0.85	2.57	4.87	12.15	23.30	33.14	13
14	0.35	0.51	0.97	2.80	5.51	11.78	20.88	37.91	14
15	0.38	0.55	1.07	3.01	6.14	12.79	22.77	42.65	15
16	0.41	0.65	1.30	3.69	7.39	15.12	28.57	48.98	16
17	0.44	0.74	1.50	4.33	8.51	17.35	34.29	54.01	17
18	0.47	0.85	2.53	4.84	10.70	18.14	34.19	57.51	18
19	0.51	0.96	2.76	5.48	11.83	20.05	39.24	59.99	19
20	0.54	1.06	2.96	6.11	12.85	21.75	44.35	62.07	20
21	0.64	1.30	3.63	7.36	15.18	27.41	51.06	65.72	21
22	0.74	1.49	4.27	8.47	17.43	32.93	56.36	69.12	22
23	0.84	2.52	4.77	10.66	18.21	33.04	60.02	73.39	23
24	0.96	2.75	5.40	11.79	20.13	37.79	62.60	76.77	24
25	1.05	2.94	6.03	12.80	21.86	42.49	64.77	79.13	25
26	1.29	3.61	7.25	15.12	27.53	48.79	68.59	82.18	26
27	1.48	4.24	8.35	17.36	33.07	53.80	72.12	83.92	27
28	2.47	4.74	10.52	18.14	33.16	57.28	76.45	84.36	28
29	2.70	5.37	11.64	20.06	37.95	59.75	79.84	83.57	29
30	2.89	5.99	12.64	21.76	42.69	61.82	82.14	81.70	30
31	3.54	7.21	14.94	27.42	49.02	65.46	85.16	78.89	31
32	4.16	8.29	17.14	32.95	54.07	68.84	86.81	75.38	32
33	4.66	10.46	17.92	33.05	57.57	73.11	87.10	71.51	33
34	5.27	11.58	19.80	37.81	60.05	76.48	86.13	82.79	34
35	5.88	12.57	21.45	42.51	62.14	78.84	84.03	90.18	35
36	7.07	14.85	27.07	48.80	65.79	81.90	80.97	94.54	36
37	8.14	17.04	32.53	53.82	69.19	83.64	77.17	96.82	37
38	10.29	17.83	32.70	57.31	73.47	84.09	72.90	98.10	38
39	11.40	19.69	37.36	59.77	76.85	83.33	84.02		39
40	12.37	21.32	41.93	61.85	79.20	81.47	91.12		40
41	14.61	26.91	48.09	65.48	82.25	78.69	95.14		41
42	16.76	32.35	53.01	68.87	83.99	75.21	97.10		42
43	17.54	32.54	56.43	73.14	84.42	71.38	98.09		43
44	19.37	37.16	58.86	76.51	83.64	82.67			44
45	20.92	41.67	60.90	78.87	81.76	90.09			45
46	26.46	47.77	64.47	81.92	78.95	94.48			46
47	31.81	52.64	67.80	83.67	75.43	96.79			47
48	32.08	56.04	72.04	84.12	71.55	98.10			48
49	36.57	58.45	75.41	83.35	82.83				49
50	40.90	60.47	77.78	81.50	90.21				50
51	46.82	64.01	80.83	78.71	94.55				51
52	51.56	67.31	82.61	75.23	96.83				52
53	54.86	71.54	83.11	71.39	98.10				53
54	57.22	74.90	82.40	82.69					54
55	59.18	77.28	80.63	90.10					55
56	62.63	80.34	77.93	94.49					56
57	65.85	82.12	74.55	96.79					57
58	70.04	82.64	70.86	98.10					58
59	73.39	81.97	82.22						59
60	75.77	80.22	89.74						60
61	78.83	77.57	94.25						61
62	80.64	74.23	96.69						62
63	81.22	70.62	98.10						63
64	80.63	82.00							64
65	78.99	89.57							65
66	76.46	94.14							66
67	73.27	96.64							67
68	69.86	98.10							68
69	81.33								69
70	89.05								70
71	93.80								71
72	96.48								72
73	98.10								73

Exhibit 3  
Active Life Mortality - Ultimate

Att Age	Percent of A2000 Basic		Att Age	Percent of A2000 Basic	
	Male	Female		Male	Female
18	63%	60%	67	63%	60%
19	63%	60%	68	63%	60%
20	63%	60%	69	63%	60%
21	63%	60%	70	63%	60%
22	63%	60%	71	63%	60%
23	63%	60%	72	57%	60%
24	63%	60%	73	57%	73%
25	63%	60%	74	57%	73%
26	63%	60%	75	66%	65%
27	63%	60%	76	66%	65%
28	63%	60%	77	70%	66%
29	63%	60%	78	73%	66%
30	63%	60%	79	72%	68%
31	63%	60%	80	73%	63%
32	63%	60%	81	75%	66%
33	63%	60%	82	78%	67%
34	63%	60%	83	74%	66%
35	63%	60%	84	78%	65%
36	63%	60%	85	86%	72%
37	63%	60%	86	79%	65%
38	63%	60%	87	89%	66%
39	63%	60%	88	90%	64%
40	63%	60%	89	90%	68%
41	63%	60%	90	99%	67%
42	63%	60%	91	99%	75%
43	63%	60%	92	106%	73%
44	63%	60%	93	106%	73%
45	63%	60%	94	106%	84%
46	63%	60%	95	106%	84%
47	63%	60%	96	106%	84%
48	63%	60%	97	106%	84%
49	63%	60%	98	106%	84%
50	63%	60%	99	106%	84%
51	63%	60%	100	105%	85%
52	63%	60%	101	105%	86%
53	63%	60%	102	105%	87%
54	63%	60%	103	104%	88%
55	63%	60%	104	104%	89%
56	63%	60%	105	104%	90%
57	63%	60%	106	103%	91%
58	63%	60%	107	103%	92%
59	63%	60%	108	102%	93%
60	63%	60%	109	102%	94%
61	63%	60%	110	102%	95%
62	63%	60%	111	101%	96%
63	63%	60%	112	101%	97%
64	63%	60%	113	101%	98%
65	63%	60%	114	100%	99%
66	63%	60%	115	100%	100%

## Exhibit 4

### Lapse Rates

[illegible][illegible]

Exhibit 5  
Anticipated Loss Ratio  
Facility Only Benefits with Standard Annual Premium  
(Excludes All Riders)  
Moderately Adverse Experience Scenario

Pol Dur	In Force	Earned Premium	Incurred Claims	Expected Dividends	Policy Reserve	Annual Loss Ratio	Cumulative Loss Ratio
0	1.0000	\$2,521	\$59	\$0	\$0	2%	2%
1	0.9634	\$2,425	\$68	\$0	\$1,482	3%	3%
2	0.9349	\$2,350	\$82	\$0	\$2,964	4%	3%
3	0.9138	\$2,294	\$103	\$0	\$4,452	4%	3%
4	0.8957	\$2,244	\$129	\$0	\$5,966	6%	4%
5	0.8815	\$2,203	\$160	\$0	\$7,491	7%	4%
6	0.8676	\$2,163	\$170	\$0	\$9,044	8%	5%
7	0.8532	\$2,121	\$196	\$0	\$10,612	9%	5%
8	0.8393	\$2,080	\$232	\$0	\$12,189	11%	6%
9	0.8265	\$2,041	\$267	\$0	\$13,774	13%	6%
10	0.8138	\$2,002	\$299	\$36	\$15,370	15%	7%
11	0.8014	\$1,964	\$341	\$43	\$16,968	18%	7%
12	0.7883	\$1,924	\$406	\$51	\$18,549	22%	8%
13	0.7745	\$1,882	\$468	\$61	\$20,111	26%	9%
14	0.7598	\$1,837	\$514	\$71	\$21,659	29%	10%
15	0.7443	\$1,791	\$597	\$83	\$23,165	35%	11%
16	0.7280	\$1,742	\$684	\$95	\$24,616	42%	12%
17	0.7106	\$1,691	\$784	\$110	\$25,998	50%	13%
18	0.6923	\$1,636	\$892	\$126	\$27,296	59%	14%
19	0.6729	\$1,580	\$1,008	\$143	\$28,495	70%	15%
20	0.6524	\$1,521	\$1,131	\$163	\$29,579	83%	17%
21	0.6308	\$1,459	\$1,265	\$184	\$30,528	99%	18%
22	0.6082	\$1,395	\$1,401	\$207	\$31,331	118%	20%
23	0.5844	\$1,330	\$1,551	\$232	\$31,969	141%	22%
24	0.5596	\$1,262	\$1,698	\$260	\$32,428	169%	23%
25	0.5339	\$1,192	\$1,847	\$288	\$32,692	204%	25%
26	0.5073	\$1,122	\$2,002	\$317	\$32,748	249%	27%
27	0.4799	\$1,050	\$2,143	\$345	\$32,596	304%	30%
28	0.4518	\$978	\$2,282	\$371	\$32,231	376%	32%
29	0.4233	\$906	\$2,410	\$398	\$31,647	474%	34%
30	0.3944	\$835	\$2,517	\$424	\$30,851	613%	36%
31	0.3655	\$765	\$2,603	\$447	\$29,862	820%	38%
32	0.3367	\$696	\$2,671	\$463	\$28,691	1145%	41%
33	0.3083	\$630	\$2,714	\$467	\$27,360	1673%	43%
34	0.2806	\$566	\$2,730	\$455	\$25,891	2454%	45%
35	0.2536	\$505	\$2,714	\$435	\$24,315	3833%	47%
36	0.2278	\$448	\$2,671	\$406	\$22,666	6300%	49%
37	0.2032	\$395	\$2,610	\$374	\$20,966	12372%	51%
38	0.1801	\$346	\$2,524	\$338	\$19,247	NA	52%
39	0.1585	\$301	\$2,416	\$302	\$17,539	NA	54%
40	0.1386	\$260	\$2,287	\$267	\$15,870	NA	55%
41	0.1204	\$224	\$2,147	\$234	\$14,260	NA	57%
42	0.1039	\$191	\$1,996	\$203	\$12,729	NA	58%
43	0.0892	\$162	\$1,839	\$175	\$11,292	NA	59%
44	0.0760	\$137	\$1,681	\$149	\$9,959	NA	60%
45	0.0645	\$115	\$1,524	\$126	\$8,735	NA	61%
46	0.0544	\$96	\$1,371	\$106	\$7,622	NA	61%
47	0.0457	\$80	\$1,225	\$89	\$6,620	NA	62%
48	0.0382	\$67	\$1,087	\$74	\$5,726	NA	62%
49	0.0318	\$55	\$961	\$62	\$4,934	NA	63%
50	0.0264	\$46	\$849	\$51	\$4,234	NA	63%
51	0.0218	\$38	\$745	\$42	\$3,619	NA	64%
52	0.0180	\$31	\$651	\$35	\$3,082	NA	64%
53	0.0148	\$25	\$565	\$29	\$2,618	NA	64%
54	0.0121	\$21	\$491	\$24	\$2,218	NA	64%
55	0.0099	\$17	\$425	\$20	\$1,874	NA	64%
56	0.0081	\$14	\$367	\$16	\$1,580	NA	64%
57	0.0066	\$11	\$315	\$13	\$1,330	NA	65%
58	0.0054	\$9	\$270	\$11	\$1,117	NA	65%
59	0.0044	\$7	\$232	\$9	\$936	NA	65%
NPV @ 4%		\$35,993.02	\$21,532.57	\$2,866.42			
							65%

NA - Expected Dividends exceed earned premium

Exhibit 6A  
Gross-to Net Test  
Unisex Rating  
Single Insured  
Select Preferred  
Standard Premium Payment Option  
\$170 DBA  
Facility Only - Daily Reimbursement  
90 Service Day Elimination Period  
No Riders

2 Year Benefit Period																
No Inflation Protection						3% Compound Inflation protection					5% Compound Inflation protection					
Issue Age	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Issue Age
42	\$572.58	\$247.15	\$124.66	\$200.78	Pass	\$1,261.40	\$795.12	\$202.37	\$263.92	Pass	\$2,624.16	\$1,977.48	\$356.17	\$290.51	Pass	42
47	\$699.79	\$318.89	\$139.95	\$240.95	Pass	\$1,400.28	\$888.05	\$219.86	\$292.37	Pass	\$2,694.90	\$2,006.41	\$367.66	\$320.82	Pass	47
52	\$826.92	\$418.09	\$115.11	\$293.72	Pass	\$1,539.73	\$1,009.22	\$162.59	\$367.92	Pass	\$2,766.88	\$2,072.84	\$244.35	\$449.69	Pass	52
57	\$1,017.81	\$557.95	\$179.78	\$280.08	Pass	\$1,802.54	\$1,168.59	\$271.83	\$362.12	Pass	\$3,021.88	\$2,183.74	\$415.13	\$423.00	Pass	57
62	\$1,463.19	\$748.32	\$236.61	\$478.25	Pass	\$2,294.28	\$1,356.74	\$336.40	\$601.14	Pass	\$3,530.67	\$2,304.30	\$485.35	\$741.02	Pass	62
67	\$2,194.67	\$1,054.10	\$334.71	\$805.86	Pass	\$3,144.96	\$1,648.63	\$452.54	\$1,043.79	Pass	\$4,547.35	\$2,538.58	\$627.58	\$1,381.20	Pass	67
72	\$3,721.46	\$1,641.14	\$548.28	\$1,532.05	Pass	\$4,849.06	\$2,214.91	\$693.17	\$1,940.98	Pass	\$6,490.22	\$3,099.17	\$907.47	\$2,483.58	Pass	72
77	\$6,329.59	\$2,761.49	\$936.57	\$2,631.53	Pass	\$7,829.70	\$3,229.65	\$1,136.13	\$3,463.92	Pass	\$10,146.33	\$4,163.27	\$1,454.53	\$4,528.52	Pass	77

3 Year Benefit Period																
No Inflation Protection						3% Compound Inflation protection					5% Compound Inflation protection					
Issue Age	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Issue Age
42	\$671.22	\$310.88	\$135.80	\$224.54	Pass	\$1,478.69	\$998.61	\$226.89	\$253.19	Pass	\$3,076.19	\$2,482.96	\$407.19	\$186.04	Pass	42
47	\$820.34	\$400.82	\$153.73	\$265.79	Pass	\$1,641.50	\$1,114.75	\$247.40	\$279.34	Pass	\$3,159.12	\$2,518.12	\$420.66	\$220.34	Pass	47
52	\$969.37	\$524.85	\$124.60	\$319.92	Pass	\$1,804.96	\$1,265.61	\$180.26	\$359.09	Pass	\$3,243.51	\$2,599.08	\$276.10	\$368.33	Pass	52
57	\$1,193.14	\$699.83	\$200.41	\$292.90	Pass	\$2,113.05	\$1,464.72	\$308.32	\$340.00	Pass	\$3,542.43	\$2,737.03	\$476.30	\$329.09	Pass	57
62	\$1,715.24	\$936.96	\$267.04	\$511.24	Pass	\$2,689.49	\$1,698.02	\$384.01	\$607.46	Pass	\$4,138.86	\$2,884.02	\$558.62	\$696.22	Pass	62
67	\$2,572.72	\$1,318.01	\$382.03	\$872.68	Pass	\$3,686.71	\$2,061.05	\$520.16	\$1,105.50	Pass	\$5,330.67	\$3,173.67	\$725.35	\$1,431.66	Pass	67
72	\$4,362.51	\$2,053.03	\$632.38	\$1,677.11	Pass	\$5,684.36	\$2,772.28	\$802.23	\$2,109.85	Pass	\$7,608.23	\$3,880.77	\$1,053.44	\$2,674.01	Pass	72
77	\$7,419.92	\$3,458.66	\$1,087.53	\$2,873.73	Pass	\$9,178.44	\$4,049.91	\$1,321.45	\$3,807.07	Pass	\$11,894.13	\$5,228.19	\$1,694.69	\$4,971.25	Pass	77

4 Year Benefit Period																	Issue Age	
No Inflation Protection						3% Compound Inflation protection						5% Compound Inflation protection						
Issue Age	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Issue Age		
42	\$753.20	\$352.67	\$145.06	\$255.47	Pass	\$1,659.30	\$1,131.38	\$247.28	\$280.64	Pass	\$3,451.91	\$2,812.39	\$449.60	\$189.92	Pass	42		
47	\$920.53	\$454.40	\$165.17	\$300.96	Pass	\$1,841.98	\$1,262.44	\$270.29	\$309.26	Pass	\$3,544.97	\$2,851.20	\$464.71	\$229.06	Pass	47		
52	\$1,087.76	\$594.31	\$132.49	\$360.96	Pass	\$2,025.42	\$1,432.11	\$194.95	\$398.36	Pass	\$3,639.66	\$2,940.70	\$302.50	\$396.47	Pass	52		
57	\$1,338.86	\$791.80	\$217.56	\$329.50	Pass	\$2,371.13	\$1,656.64	\$338.65	\$375.83	Pass	\$3,975.09	\$3,095.72	\$527.15	\$352.22	Pass	57		
62	\$1,924.73	\$1,058.46	\$292.32	\$573.94	Pass	\$3,017.98	\$1,918.15	\$423.58	\$676.24	Pass	\$4,644.37	\$3,258.26	\$619.52	\$766.59	Pass	62		
67	\$2,886.94	\$1,487.19	\$421.36	\$978.39	Pass	\$4,136.99	\$2,326.20	\$576.35	\$1,234.43	Pass	\$5,981.75	\$3,582.49	\$806.61	\$1,592.66	Pass	67		
72	\$4,895.34	\$2,316.85	\$702.28	\$1,876.21	Pass	\$6,378.63	\$3,131.35	\$892.87	\$2,354.41	Pass	\$8,537.47	\$4,385.88	\$1,174.75	\$2,976.84	Pass	72		
77	\$8,326.17	\$3,906.20	\$1,212.95	\$3,207.02	Pass	\$10,299.47	\$4,580.17	\$1,475.44	\$4,243.86	Pass	\$13,346.85	\$5,920.79	\$1,894.24	\$5,531.81	Pass	77		

5 Year Benefit Period																
No Inflation Protection						3% Compound Inflation protection					5% Compound Inflation protection					
Issue Age	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Issue Age
42	\$813.40	\$397.00	\$151.87	\$264.53	Pass	\$1,791.93	\$1,270.98	\$262.27	\$258.68	Pass	\$3,727.83	\$3,153.22	\$480.80	\$93.81	Pass	42
47	\$994.11	\$511.24	\$173.61	\$309.26	Pass	\$1,989.22	\$1,417.91	\$287.14	\$284.16	Pass	\$3,828.32	\$3,196.33	\$497.14	\$134.85	Pass	47
52	\$1,174.71	\$668.08	\$138.29	\$368.34	Pass	\$2,187.31	\$1,607.74	\$205.74	\$373.83	Pass	\$3,930.59	\$3,295.58	\$321.90	\$313.11	Pass	52
57	\$1,445.88	\$889.62	\$230.22	\$326.04	Pass	\$2,560.66	\$1,859.55	\$361.03	\$340.08	Pass	\$4,292.82	\$3,469.30	\$564.66	\$258.86	Pass	57
62	\$2,078.58	\$1,188.22	\$311.03	\$579.33	Pass	\$3,259.21	\$2,151.92	\$452.83	\$654.45	Pass	\$5,015.61	\$3,649.96	\$664.53	\$701.12	Pass	62
67	\$3,117.70	\$1,669.29	\$450.55	\$997.87	Pass	\$4,467.67	\$2,610.01	\$618.00	\$1,239.66	Pass	\$6,459.88	\$4,013.93	\$866.83	\$1,579.13	Pass	67
72	\$5,286.64	\$2,603.19	\$754.41	\$1,929.03	Pass	\$6,888.49	\$3,518.87	\$960.32	\$2,409.29	Pass	\$9,219.89	\$4,923.87	\$1,265.03	\$3,030.99	Pass	72
77	\$8,991.70	\$4,394.35	\$1,307.09	\$3,290.25	Pass	\$11,122.73	\$5,154.48	\$1,590.63	\$4,377.61	Pass	\$14,413.69	\$6,662.43	\$2,043.51	\$5,707.75	Pass	77

6 Year Benefit Period																	Issue Age	
No Inflation Protection						3% Compound Inflation protection						5% Compound Inflation protection						
Issue Age	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Issue Age		
42	\$858.24	\$430.44	\$156.95	\$270.85	Pass	\$1,890.70	\$1,374.61	\$273.45	\$242.64	Pass	\$3,933.30	\$3,403.18	\$504.04	\$26.08	Pass	42		
47	\$1,048.91	\$554.01	\$179.89	\$315.01	Pass	\$2,098.86	\$1,533.25	\$299.70	\$265.91	Pass	\$4,039.33	\$3,449.39	\$521.31	\$68.64	Pass	47		
52	\$1,239.46	\$723.35	\$142.61	\$373.50	Pass	\$2,307.87	\$1,737.77	\$213.78	\$356.32	Pass	\$4,147.23	\$3,555.42	\$336.34	\$255.47	Pass	52		
57	\$1,525.58	\$962.76	\$239.66	\$323.16	Pass	\$2,701.80	\$2,009.66	\$377.71	\$314.42	Pass	\$4,529.44	\$3,742.79	\$592.63	\$194.03	Pass	57		
62	\$2,193.14	\$1,285.04	\$324.98	\$583.12	Pass	\$3,438.85	\$2,324.67	\$474.64	\$639.54	Pass	\$5,292.06	\$3,936.43	\$698.10	\$657.53	Pass	62		
67	\$3,289.55	\$1,805.83	\$472.31	\$1,011.41	Pass	\$4,713.92	\$2,820.77	\$649.06	\$1,244.09	Pass	\$6,815.94	\$4,330.87	\$911.73	\$1,573.34	Pass	67		
72	\$5,578.02	\$2,816.96	\$793.26	\$1,967.81	Pass	\$7,268.17	\$3,806.94	\$1,010.57	\$2,450.65	Pass	\$9,728.08	\$5,320.83	\$1,332.30	\$3,074.94	Pass	72		
77	\$9,487.30	\$4,742.41	\$1,377.07	\$3,367.82	Pass	\$11,735.79	\$5,565.64	\$1,676.28	\$4,493.87	Pass	\$15,208.14	\$7,194.60	\$2,154.50	\$5,859.04	Pass	77		

10 Year Benefit Period																		
No Inflation Protection						3% Compound Inflation protection						5% Compound Inflation protection						
Issue Age	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Issue Age		
42	\$1,097.77	\$524.49	\$184.07	\$389.21	Pass	\$2,418.40	\$1,662.19	\$333.14	\$423.07	Pass	\$5,031.10	\$4,084.53	\$628.23	\$318.34	Pass	42		
47	\$1,341.66	\$673.87	\$213.45	\$454.34	Pass	\$2,684.66	\$1,853.26	\$366.78	\$464.63	Pass	\$5,166.73	\$4,139.76	\$650.40	\$376.57	Pass	47		
52	\$1,585.40	\$877.80	\$165.68	\$541.92	Pass	\$2,952.01	\$2,098.43	\$256.73	\$596.85	Pass	\$5,304.74	\$4,264.85	\$413.53	\$626.36	Pass	52		
57	\$1,951.37	\$1,167.20	\$290.08	\$494.09	Pass	\$3,455.88	\$2,426.61	\$466.82	\$562.45	Pass	\$5,793.62	\$4,490.91	\$742.01	\$560.70	Pass	57		
62	\$2,805.26	\$1,556.50	\$399.50	\$849.26	Pass	\$4,398.65	\$2,806.08	\$591.16	\$1,001.42	Pass	\$6,769.09	\$4,723.11	\$877.40	\$1,168.58	Pass	62		
67	\$4,207.67	\$2,192.66	\$588.57	\$1,426.45	Pass	\$6,029.60	\$3,414.54	\$814.95	\$1,800.10	Pass	\$8,718.30	\$5,211.15	\$1,151.60	\$2,355.55	Pass	67		
72	\$7,134.88	\$3,424.32	\$1,000.61	\$2,709.95	Pass	\$9,296.74	\$4,623.49	\$1,278.88	\$3,394.38	Pass	\$12,443.22	\$6,434.18	\$1,691.41	\$4,317.64	Pass	72		
77	\$12,135.25	\$5,696.11	\$1,750.51	\$4,688.64	Pass	\$15,011.30	\$6,691.79	\$2,133.49	\$6,186.02	Pass	\$19,452.80	\$8,645.98	\$2,746.98	\$8,059.84	Pass	77		

Lifetime Benefit Period																	
No Inflation Protection						3% Compound Inflation protection					5% Compound Inflation protection						
Issue Age	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Issue Age	
42	\$1,280.95	\$556.17	\$204.69	\$520.09	Pass	\$2,821.93	\$1,764.79	\$378.56	\$678.59	Pass	\$5,870.59	\$4,353.83	\$722.71	\$794.06	Pass	42	
47	\$1,565.53	\$712.41	\$238.93	\$614.20	Pass	\$3,132.63	\$1,964.13	\$417.74	\$750.76	Pass	\$6,028.86	\$4,506.53	\$748.49	\$873.83	Pass	47	
52	\$1,849.94	\$925.22	\$183.29	\$741.43	Pass	\$3,444.59	\$2,218.72	\$289.52	\$936.34	Pass	\$6,189.90	\$4,529.87	\$472.45	\$1,187.58	Pass	52	
57	\$2,276.98	\$1,228.05	\$328.16	\$720.77	Pass	\$4,032.53	\$2,561.83	\$534.21	\$936.49	Pass	\$6,760.35	\$4,763.18	\$854.99	\$1,142.18	Pass	57	
62	\$3,273.35	\$1,632.39	\$455.52	\$1,185.44	Pass	\$5,132.61	\$2,953.43	\$678.92	\$1,500.26	Pass	\$7,898.59	\$4,994.18	\$1,012.46	\$1,891.95	Pass	62	
67	\$4,909.77	\$2,290.22	\$675.45	\$1,944.10	Pass	\$7,035.70	\$3,580.96	\$939.28	\$2,515.46	Pass	\$10,173.04	\$5,490.77	\$1,331.37	\$3,350.90	Pass	67	
72	\$8,325.41	\$3,558.97	\$1,154.16	\$3,612.27	Pass	\$10,848.01	\$4,827.56	\$1,478.52	\$4,541.93	Pass	\$14,519.52	\$6,752.17	\$1,958.61	\$5,808.73	Pass	72	
77	\$14,160.15	\$6,872.12	\$2,024.86	\$6,263.16	Pass	\$17,516.11	\$6,927.54	\$2,471.54	\$8,117.03	Pass	\$22,698.72	\$8,993.61	\$3,185.06	\$10,520.06	Pass	77	

Exhibit 6B  
Gross-to Net Test  
Unisex Rating  
Insured with Partner Discount  
Select Preferred  
Standard Premium Payment Option  
\$170 DBA  
Facility Only - Daily Reimbursement  
90 Service Day Elimination Period  
No Riders

2 Year Benefit Period																
No Inflation Protection						3% Compound Inflation protection					5% Compound Inflation protection					
Issue Age	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Issue Age
42	\$486.70	\$210.07	\$114.96	\$161.66	Pass	\$1,072.19	\$675.85	\$181.01	\$215.33	Pass	\$2,230.53	\$1,680.85	\$311.75	\$237.93	Pass	42
47	\$594.82	\$271.06	\$127.96	\$195.81	Pass	\$1,190.24	\$754.84	\$195.88	\$239.52	Pass	\$2,290.66	\$1,705.45	\$321.51	\$263.70	Pass	47
52	\$702.88	\$355.38	\$106.84	\$240.67	Pass	\$1,308.77	\$857.84	\$147.20	\$303.73	Pass	\$2,351.85	\$1,761.92	\$216.70	\$373.24	Pass	52
57	\$865.14	\$474.26	\$161.81	\$229.07	Pass	\$1,532.16	\$993.30	\$240.06	\$298.80	Pass	\$2,568.60	\$1,856.18	\$361.86	\$350.55	Pass	57
62	\$1,243.71	\$636.07	\$210.12	\$397.51	Pass	\$1,950.14	\$1,153.23	\$294.94	\$501.97	Pass	\$3,001.07	\$1,958.66	\$421.55	\$620.87	Pass	62
67	\$1,865.47	\$895.99	\$293.50	\$675.98	Pass	\$2,673.21	\$1,401.34	\$393.66	\$878.22	Pass	\$3,865.25	\$2,157.79	\$542.44	\$1,165.02	Pass	67
72	\$3,163.24	\$1,394.97	\$475.04	\$1,293.24	Pass	\$4,121.70	\$1,882.67	\$598.20	\$1,640.83	Pass	\$5,516.69	\$2,634.30	\$780.35	\$2,102.05	Pass	72
77	\$5,380.15	\$2,347.27	\$805.09	\$2,227.80	Pass	\$6,655.24	\$2,745.20	\$974.71	\$2,935.33	Pass	\$8,624.38	\$3,538.78	\$1,245.35	\$3,840.25	Pass	77

3 Year Benefit Period																
No Inflation Protection						3% Compound Inflation protection					5% Compound Inflation protection					
Issue Age	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Issue Age
42	\$570.54	\$264.25	\$124.43	\$181.86	Pass	\$1,256.89	\$848.82	\$201.86	\$206.21	Pass	\$2,614.76	\$2,110.51	\$355.11	\$149.13	Pass	42
47	\$697.29	\$340.70	\$139.67	\$216.92	Pass	\$1,395.27	\$947.54	\$219.29	\$228.44	Pass	\$2,685.25	\$2,140.40	\$366.56	\$178.29	Pass	47
52	\$823.96	\$446.12	\$114.91	\$262.93	Pass	\$1,534.22	\$1,075.77	\$162.22	\$296.23	Pass	\$2,756.98	\$2,209.21	\$243.69	\$304.08	Pass	52
57	\$1,014.17	\$594.85	\$179.35	\$239.96	Pass	\$1,796.09	\$1,245.01	\$271.08	\$280.00	Pass	\$3,011.06	\$2,326.48	\$413.86	\$270.73	Pass	57
62	\$1,457.95	\$796.41	\$235.98	\$425.55	Pass	\$2,286.07	\$1,443.32	\$335.41	\$507.34	Pass	\$3,518.03	\$2,451.42	\$483.83	\$582.79	Pass	62
67	\$2,186.81	\$1,120.31	\$333.73	\$732.78	Pass	\$3,133.70	\$1,751.89	\$451.13	\$930.68	Pass	\$4,531.07	\$2,697.62	\$625.54	\$1,207.91	Pass	67
72	\$3,708.14	\$1,745.07	\$546.52	\$1,416.54	Pass	\$4,831.70	\$2,356.44	\$690.90	\$1,784.37	Pass	\$6,466.99	\$3,298.66	\$904.42	\$2,263.91	Pass	72
77	\$6,306.93	\$2,939.86	\$933.40	\$2,433.67	Pass	\$7,801.67	\$3,442.43	\$1,132.24	\$3,227.01	Pass	\$10,110.01	\$4,443.97	\$1,449.49	\$4,216.56	Pass	77

4 Year Benefit Period																
No Inflation Protection						3% Compound Inflation protection					5% Compound Inflation protection					
Issue Age	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Issue Age
42	\$640.22	\$299.77	\$132.30	\$208.15	Pass	\$1,410.40	\$961.67	\$219.18	\$229.54	Pass	\$2,934.12	\$2,390.54	\$391.16	\$152.43	Pass	42
47	\$782.45	\$386.24	\$149.40	\$246.82	Pass	\$1,565.69	\$1,073.07	\$238.75	\$253.87	Pass	\$3,013.22	\$2,423.52	\$404.00	\$185.70	Pass	47
52	\$924.60	\$505.17	\$121.62	\$297.82	Pass	\$1,721.61	\$1,217.29	\$174.70	\$329.61	Pass	\$3,093.71	\$2,499.59	\$266.12	\$328.00	Pass	52
57	\$1,138.03	\$673.03	\$193.93	\$271.08	Pass	\$2,015.46	\$1,408.15	\$296.86	\$310.46	Pass	\$3,378.82	\$2,631.36	\$457.08	\$290.38	Pass	57
62	\$1,636.02	\$899.69	\$257.48	\$478.85	Pass	\$2,565.28	\$1,630.43	\$369.05	\$565.80	Pass	\$3,947.72	\$2,769.52	\$535.59	\$642.60	Pass	62
67	\$2,453.90	\$1,264.11	\$367.16	\$822.63	Pass	\$3,516.44	\$1,977.27	\$498.90	\$1,040.27	Pass	\$5,084.49	\$3,045.11	\$694.62	\$1,344.76	Pass	67
72	\$4,161.04	\$1,969.32	\$605.93	\$1,585.78	Pass	\$5,421.84	\$2,661.65	\$767.94	\$1,992.24	Pass	\$7,256.85	\$3,728.00	\$1,007.54	\$2,521.31	Pass	72
77	\$7,077.24	\$3,320.27	\$1,040.01	\$2,716.96	Pass	\$8,754.55	\$3,893.15	\$1,263.13	\$3,598.28	Pass	\$11,344.82	\$5,032.68	\$1,619.10	\$4,693.04	Pass	77

5 Year Benefit Period																
No Inflation Protection						3% Compound Inflation protection					5% Compound Inflation protection					
Issue Age	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Issue Age
42	\$691.39	\$337.45	\$138.09	\$215.85	Pass	\$1,523.14	\$1,080.33	\$231.93	\$210.88	Pass	\$3,168.65	\$2,680.23	\$417.68	\$70.74	Pass	42
47	\$844.99	\$434.56	\$156.56	\$253.87	Pass	\$1,690.83	\$1,205.23	\$253.07	\$232.54	Pass	\$3,254.08	\$2,716.88	\$431.57	\$105.62	Pass	47
52	\$998.51	\$567.87	\$126.55	\$304.09	Pass	\$1,859.22	\$1,366.58	\$183.88	\$308.76	Pass	\$3,341.00	\$2,801.24	\$282.61	\$257.15	Pass	52
57	\$1,229.00	\$756.18	\$204.69	\$268.13	Pass	\$2,176.56	\$1,580.62	\$315.88	\$280.07	Pass	\$3,648.90	\$2,948.91	\$488.96	\$211.03	Pass	57
62	\$1,766.79	\$1,009.99	\$273.38	\$483.43	Pass	\$2,770.33	\$1,829.13	\$393.91	\$547.29	Pass	\$4,263.27	\$3,102.46	\$573.85	\$586.95	Pass	62
67	\$2,650.05	\$1,418.89	\$391.96	\$839.19	Pass	\$3,797.52	\$2,218.51	\$534.30	\$1,044.71	Pass	\$5,490.90	\$3,411.84	\$745.80	\$1,333.26	Pass	67
72	\$4,493.64	\$2,212.71	\$650.25	\$1,630.68	Pass	\$5,855.21	\$2,991.04	\$825.27	\$2,038.90	Pass	\$7,836.91	\$4,185.29	\$1,084.28	\$2,567.34	Pass	72
77	\$7,642.94	\$3,735.20	\$1,120.03	\$2,787.71	Pass	\$9,454.32	\$4,381.31	\$1,361.04	\$3,711.97	Pass	\$12,251.63	\$5,663.06	\$1,745.98	\$4,842.59	Pass	77

6 Year Benefit Period																
No Inflation Protection						3% Compound Inflation protection					5% Compound Inflation protection					
Issue Age	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Issue Age
42	\$729.50	\$365.87	\$142.41	\$221.22	Pass	\$1,607.09	\$1,168.42	\$241.43	\$197.25	Pass	\$3,343.30	\$2,892.70	\$437.44	\$133.17	Pass	42
47	\$891.57	\$470.90	\$161.90	\$258.76	Pass	\$1,784.03	\$1,303.26	\$263.74	\$217.03	Pass	\$3,433.43	\$2,931.98	\$452.11	\$49.34	Pass	47
52	\$1,053.54	\$614.85	\$130.22	\$308.48	Pass	\$1,961.69	\$1,477.10	\$190.71	\$293.88	Pass	\$3,525.15	\$3,022.11	\$294.89	\$208.15	Pass	52
57	\$1,296.74	\$818.34	\$212.71	\$265.69	Pass	\$2,296.53	\$1,708.21	\$330.05	\$258.26	Pass	\$3,850.02	\$3,181.37	\$512.73	\$155.92	Pass	57
62	\$1,864.17	\$1,092.29	\$285.23	\$486.65	Pass	\$2,923.02	\$1,975.97	\$412.45	\$534.61	Pass	\$4,498.25	\$3,345.97	\$602.38	\$549.90	Pass	62
67	\$2,796.11	\$1,534.95	\$410.47	\$850.70	Pass	\$4,006.83	\$2,397.65	\$560.70	\$1,048.48	Pass	\$5,793.55	\$3,681.24	\$783.97	\$1,328.34	Pass	67
72	\$4,741.32	\$2,394.42	\$683.27	\$1,663.64	Pass	\$6,177.94	\$3,235.90	\$867.99	\$2,074.06	Pass	\$8,268.86	\$4,522.71	\$1,141.45	\$2,604.70	Pass	72
77	\$8,064.21	\$4,031.05	\$1,179.51	\$2,853.65	Pass	\$9,975.42	\$4,730.79	\$1,433.84	\$3,810.79	Pass	\$12,926.92	\$6,115.41	\$1,840.33	\$4,971.18	Pass	77

10 Year Benefit Period																
No Inflation Protection						3% Compound Inflation protection					5% Compound Inflation protection					
Issue Age	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Issue Age
42	\$933.11	\$445.82	\$165.46	\$321.83	Pass	\$2,055.64	\$1,412.86	\$292.17	\$350.61	Pass	\$4,276.43	\$3,471.85	\$542.99	\$261.59	Pass	42
47	\$1,140.41	\$572.79	\$190.43	\$377.19	Pass	\$2,281.96	\$1,575.27	\$320.76	\$385.93	Pass	\$4,391.72	\$3,518.80	\$561.84	\$311.08	Pass	47
52	\$1,347.59	\$746.13	\$149.83	\$451.63	Pass	\$2,509.21	\$1,783.66	\$227.22	\$498.32	Pass	\$4,509.03	\$3,625.13	\$360.50	\$523.41	Pass	52
57	\$1,658.67	\$992.12	\$255.57	\$410.98	Pass	\$2,937.50	\$2,062.62	\$405.80	\$469.08	Pass	\$4,924.58	\$3,817.27	\$639.71	\$467.59	Pass	57
62	\$2,384.47	\$1,323.03	\$348.58	\$712.87	Pass	\$3,738.85	\$2,385.16	\$511.48	\$842.20	Pass	\$5,753.73	\$4,014.65	\$754.79	\$984.30	Pass	62
67	\$3,576.52	\$1,863.76	\$509.28	\$1,203.48	Pass	\$5,125.16	\$2,902.36	\$701.71	\$1,521.09	Pass	\$7,410.55	\$4,429.48	\$987.86	\$1,993.21	Pass	67
72	\$6,064.64	\$2,910.67	\$859.52	\$2,294.45	Pass	\$7,902.23	\$3,929.97	\$1,096.05	\$2,876.22	Pass	\$10,576.74	\$5,469.06	\$1,446.69	\$3,660.99	Pass	72
77	\$10,314.96	\$4,841.69	\$1,496.93	\$3,976.34	Pass	\$12,759.61	\$5,688.02	\$1,822.46	\$5,249.12	Pass	\$16,534.88	\$7,349.09	\$2,343.94	\$6,841.86	Pass	77

Lifetime Benefit Period																	Issue Age
No Inflation Protection						3% Compound Inflation protection					5% Compound Inflation protection						
Issue Age	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail		
42	\$1,088.81	\$472.74	\$182.99	\$433.08	Pass	\$2,398.64	\$1,500.07	\$330.77	\$567.80	Pass	\$4,990.00	\$3,700.76	\$623.30	\$665.95	Pass	42	
47	\$1,330.70	\$605.55	\$212.09	\$513.07	Pass	\$2,662.73	\$1,669.51	\$364.08	\$629.14	Pass	\$5,124.53	\$3,745.55	\$645.21	\$733.76	Pass	47	
52	\$1,572.45	\$786.44	\$164.80	\$621.21	Pass	\$2,927.90	\$1,885.91	\$255.09	\$786.89	Pass	\$5,261.41	\$3,850.39	\$410.58	\$1,000.44	Pass	52	
57	\$1,935.43	\$1,043.85	\$287.93	\$603.65	Pass	\$3,427.65	\$2,177.56	\$463.08	\$787.02	Pass	\$5,746.30	\$4,048.70	\$735.74	\$961.86	Pass	57	
62	\$2,282.35	\$1,387.53	\$396.20	\$998.62	Pass	\$4,362.72	\$2,510.42	\$586.08	\$1,266.22	Pass	\$6,713.80	\$4,245.05	\$869.59	\$1,599.16	Pass	62	
67	\$4,173.30	\$1,964.68	\$583.13	\$1,643.49	Pass	\$5,980.35	\$3,043.82	\$807.39	\$2,129.14	Pass	\$8,647.09	\$4,667.15	\$1,140.67	\$2,839.27	Pass	67	
72	\$7,076.60	\$3,025.13	\$990.04	\$3,061.43	Pass	\$9,220.81	\$4,103.42	\$1,265.74	\$3,851.64	Pass	\$12,341.59	\$5,739.35	\$1,673.82	\$4,928.42	Pass	72	
77	\$12,036.13	\$4,991.30	\$1,730.13	\$5,314.69	Pass	\$14,888.69	\$5,888.41	\$2,109.81	\$6,890.48	Pass	\$19,293.91	\$7,644.56	\$2,716.30	\$8,933.05	Pass	77	



Exhibit 6C  
Gross-to Net Test  
Unisex Rating  
Insured with Covered Partner Discount  
Select Preferred  
Standard Premium Payment Option  
\$170 DBA  
Facility Only - Daily Reimbursement  
90 Service Day Elimination Period  
No Riders

2 Year Benefit Period																
No Inflation Protection						3% Compound Inflation protection						5% Compound Inflation protection				
Issue Age	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Issue Age
42	\$400.81	\$173.00	\$105.26	\$122.54	Pass	\$882.98	\$556.58	\$159.66	\$166.74	Pass	\$1,836.91	\$1,384.23	\$267.32	\$185.35	Pass	42
47	\$489.85	\$223.22	\$115.97	\$150.66	Pass	\$980.20	\$621.63	\$171.90	\$186.66	Pass	\$1,886.43	\$1,404.49	\$275.36	\$206.58	Pass	47
52	\$578.85	\$292.66	\$98.57	\$187.61	Pass	\$1,077.81	\$706.46	\$131.81	\$239.54	Pass	\$1,936.82	\$1,450.99	\$189.04	\$296.78	Pass	52
57	\$712.47	\$390.57	\$143.85	\$178.05	Pass	\$1,261.78	\$818.01	\$208.28	\$235.48	Pass	\$2,115.31	\$1,528.62	\$308.59	\$278.10	Pass	57
62	\$1,024.23	\$523.82	\$183.63	\$316.78	Pass	\$1,605.99	\$949.72	\$253.48	\$402.80	Pass	\$2,471.47	\$1,613.01	\$357.75	\$500.71	Pass	62
67	\$1,536.27	\$737.87	\$252.30	\$546.10	Pass	\$2,201.47	\$1,154.04	\$334.78	\$712.65	Pass	\$3,183.15	\$1,777.00	\$457.30	\$948.84	Pass	67
72	\$2,605.02	\$1,148.79	\$401.79	\$1,054.43	Pass	\$3,394.34	\$1,550.43	\$503.22	\$1,340.69	Pass	\$4,543.16	\$2,169.42	\$653.23	\$1,720.51	Pass	72
77	\$4,430.71	\$1,933.04	\$673.60	\$1,824.07	Pass	\$5,480.79	\$2,260.76	\$813.29	\$2,406.74	Pass	\$7,102.43	\$2,914.29	\$1,036.17	\$3,151.97	Pass	77

3 Year Benefit Period																
No Inflation Protection						3% Compound Inflation protection						5% Compound Inflation protection				
Issue Age	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Issue Age
42	\$469.85	\$217.62	\$113.06	\$139.18	Pass	\$1,035.08	\$699.03	\$176.82	\$159.23	Pass	\$2,153.33	\$1,738.07	\$303.04	\$112.23	Pass	42
47	\$574.24	\$280.58	\$125.61	\$168.05	Pass	\$1,149.05	\$780.33	\$191.18	\$177.54	Pass	\$2,211.38	\$1,762.68	\$312.46	\$136.24	Pass	47
52	\$678.56	\$367.39	\$105.22	\$205.94	Pass	\$1,263.47	\$885.93	\$144.18	\$233.36	Pass	\$2,270.46	\$1,819.35	\$211.27	\$238.83	Pass	52
57	\$835.20	\$489.88	\$158.29	\$187.03	Pass	\$1,479.13	\$1,025.30	\$233.83	\$220.00	Pass	\$2,479.70	\$1,915.92	\$351.41	\$212.36	Pass	57
62	\$1,200.66	\$655.87	\$204.93	\$339.87	Pass	\$1,882.64	\$1,188.61	\$286.81	\$407.22	Pass	\$2,897.20	\$2,018.81	\$409.03	\$469.36	Pass	62
67	\$1,800.90	\$922.61	\$285.42	\$592.87	Pass	\$2,580.69	\$1,442.73	\$382.11	\$755.85	Pass	\$3,731.47	\$2,221.57	\$525.74	\$984.16	Pass	67
72	\$3,053.76	\$1,437.12	\$460.67	\$1,155.98	Pass	\$3,979.05	\$1,940.59	\$579.56	\$1,458.89	Pass	\$5,325.76	\$2,716.54	\$755.41	\$1,853.81	Pass	72
77	\$5,193.94	\$2,421.06	\$779.27	\$1,993.61	Pass	\$6,424.91	\$2,834.94	\$943.02	\$2,646.95	Pass	\$8,325.89	\$3,659.74	\$1,204.28	\$3,461.87	Pass	77

4 Year Benefit Period																
No Inflation Protection						3% Compound Inflation protection						5% Compound Inflation protection				
Issue Age	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Issue Age
42	\$527.24	\$246.87	\$119.54	\$160.83	Pass	\$1,161.51	\$791.97	\$191.09	\$178.45	Pass	\$2,416.34	\$1,968.68	\$332.72	\$114.94	Pass	42
47	\$644.37	\$318.08	\$133.62	\$192.67	Pass	\$1,289.39	\$883.71	\$207.20	\$198.48	Pass	\$2,481.48	\$1,995.84	\$343.30	\$142.34	Pass	47
52	\$761.44	\$416.02	\$110.74	\$234.67	Pass	\$1,417.79	\$1,002.48	\$154.46	\$260.85	Pass	\$2,547.76	\$2,058.49	\$229.75	\$259.53	Pass	52
57	\$937.20	\$554.26	\$170.29	\$212.65	Pass	\$1,659.79	\$1,159.65	\$255.06	\$245.08	Pass	\$2,782.56	\$2,167.00	\$387.01	\$228.55	Pass	57
62	\$1,347.31	\$740.92	\$222.63	\$383.76	Pass	\$2,112.58	\$1,342.71	\$314.51	\$455.37	Pass	\$3,251.06	\$2,280.78	\$451.66	\$518.61	Pass	62
67	\$2,020.86	\$1,041.04	\$312.95	\$666.87	Pass	\$2,895.89	\$1,628.34	\$421.45	\$846.10	Pass	\$4,187.22	\$2,507.74	\$582.62	\$1,096.86	Pass	67
72	\$3,426.74	\$1,621.80	\$509.59	\$1,295.35	Pass	\$4,465.04	\$2,191.95	\$643.01	\$1,630.08	Pass	\$5,976.23	\$3,070.12	\$840.33	\$2,065.79	Pass	72
77	\$5,828.32	\$2,734.34	\$867.06	\$2,226.91	Pass	\$7,209.63	\$3,206.12	\$1,050.81	\$2,952.70	Pass	\$9,342.79	\$4,144.56	\$1,343.97	\$3,854.27	Pass	77

5 Year Benefit Period																
No Inflation Protection						3% Compound Inflation protection						5% Compound Inflation protection				
Issue Age	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Issue Age
42	\$569.38	\$277.90	\$124.31	\$167.17	Pass	\$1,254.35	\$889.68	\$201.59	\$163.07	Pass	\$2,609.48	\$2,207.25	\$354.56	\$47.67	Pass	42
47	\$695.88	\$357.87	\$139.52	\$198.48	Pass	\$1,392.45	\$992.54	\$219.00	\$180.91	Pass	\$2,679.83	\$2,237.43	\$366.00	\$76.40	Pass	47
52	\$822.30	\$467.66	\$114.80	\$239.84	Pass	\$1,531.12	\$1,125.42	\$162.02	\$243.68	Pass	\$2,751.41	\$2,306.90	\$243.33	\$201.18	Pass	52
57	\$1,012.12	\$622.73	\$179.16	\$210.23	Pass	\$1,792.46	\$1,301.68	\$270.72	\$220.05	Pass	\$3,004.98	\$2,428.51	\$413.27	\$163.20	Pass	57
62	\$1,455.00	\$831.75	\$235.72	\$387.53	Pass	\$2,281.45	\$1,506.34	\$334.98	\$440.12	Pass	\$3,510.92	\$2,554.97	\$483.17	\$472.78	Pass	62
67	\$2,182.39	\$1,168.50	\$333.38	\$680.51	Pass	\$3,127.37	\$1,827.01	\$450.60	\$849.76	Pass	\$4,521.92	\$2,809.75	\$624.78	\$1,087.39	Pass	67
72	\$3,700.64	\$1,822.23	\$546.09	\$1,332.32	Pass	\$4,821.94	\$2,463.21	\$690.22	\$1,668.51	Pass	\$6,453.92	\$3,446.71	\$903.52	\$2,103.69	Pass	72
77	\$6,294.19	\$3,076.05	\$932.97	\$2,285.18	Pass	\$7,785.91	\$3,608.14	\$1,131.44	\$3,046.33	Pass	\$10,089.58	\$4,663.70	\$1,448.46	\$3,977.43	Pass	77

6 Year Benefit Period																
No Inflation Protection						3% Compound Inflation protection						5% Compound Inflation protection				
Issue Age	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Issue Age
42	\$600.77	\$301.30	\$127.86	\$171.60	Pass	\$1,323.49	\$962.22	\$209.41	\$151.85	Pass	\$2,753.31	\$2,382.22	\$370.83	\$30.25	Pass	42
47	\$734.23	\$387.80	\$143.92	\$202.51	Pass	\$1,469.20	\$1,073.28	\$227.79	\$168.14	Pass	\$2,827.53	\$2,414.57	\$382.91	\$30.05	Pass	47
52	\$867.62	\$506.35	\$117.83	\$243.45	Pass	\$1,615.51	\$1,216.44	\$167.65	\$231.43	Pass	\$2,903.06	\$2,488.80	\$253.44	\$160.83	Pass	52
57	\$1,067.90	\$673.93	\$185.76	\$208.21	Pass	\$1,891.26	\$1,406.76	\$282.40	\$202.10	Pass	\$3,170.61	\$2,619.95	\$432.84	\$117.82	Pass	57
62	\$1,535.20	\$899.53	\$245.49	\$390.18	Pass	\$2,407.20	\$1,627.27	\$350.25	\$429.68	Pass	\$3,704.44	\$2,755.50	\$506.67	\$442.27	Pass	62
67	\$2,302.68	\$1,264.08	\$348.62	\$689.98	Pass	\$3,299.74	\$1,974.54	\$472.34	\$852.86	Pass	\$4,771.16	\$3,031.61	\$656.21	\$1,083.34	Pass	67
72	\$3,904.62	\$1,971.87	\$573.28	\$1,359.47	Pass	\$5,087.72	\$2,664.86	\$725.40	\$1,697.46	Pass	\$6,809.65	\$3,724.58	\$950.61	\$2,134.46	Pass	72
77	\$6,641.11	\$3,319.69	\$981.95	\$2,339.47	Pass	\$8,215.05	\$3,895.94	\$1,191.40	\$3,127.71	Pass	\$10,645.70	\$5,036.22	\$1,526.15	\$4,083.33	Pass	77

10 Year Benefit Period																
No Inflation Protection						3% Compound Inflation protection						5% Compound Inflation protection				
Issue Age	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Issue Age
42	\$768.44	\$367.14	\$146.85	\$254.45	Pass	\$1,692.88	\$1,163.53	\$251.20	\$278.15	Pass	\$3,521.77	\$2,859.17	\$457.76	\$204.84	Pass	42
47	\$939.16	\$471.71	\$167.41	\$300.04	Pass	\$1,879.26	\$1,297.28	\$274.74	\$307.24	Pass	\$3,616.71	\$2,897.83	\$473.28	\$245.60	Pass	47
52	\$1,109.78	\$614.46	\$133.98	\$361.34	Pass	\$2,066.41	\$1,468.90	\$197.71	\$399.80	Pass	\$3,713.32	\$2,985.40	\$307.47	\$420.45	Pass	52
57	\$1,365.96	\$817.04	\$221.06	\$327.87	Pass	\$2,419.12	\$1,698.63	\$344.77	\$375.71	Pass	\$4,055.54	\$3,143.64	\$537.41	\$374.49	Pass	57
62	\$1,963.68	\$1,089.55	\$297.65	\$576.48	Pass	\$3,079.05	\$1,964.25	\$431.81	\$682.99	Pass	\$4,738.37	\$3,306.18	\$632.18	\$800.01	Pass	62
67	\$2,945.37	\$1,534.86	\$430.00	\$980.51	Pass	\$4,220.72	\$2,390.18	\$588.47	\$1,242.07	Pass	\$6,102.81	\$3,647.81	\$824.12	\$1,630.88	Pass	67
72	\$4,994.41	\$2,397.02	\$718.43	\$1,878.96	Pass	\$6,507.72	\$3,236.44	\$913.21	\$2,358.06	Pass	\$8,710.26	\$4,503.93	\$1,201.98	\$3,004.34	Pass	72
77	\$8,494.67	\$3,987.28	\$1,243.35	\$3,264.04	Pass	\$10,507.91	\$4,684.25	\$1,511.44	\$4,312.22	Pass	\$13,616.96	\$6,052.19	\$1,940.89	\$5,623.88	Pass	77

Lifetime Benefit Period																	Issue Age
No Inflation Protection						3% Compound Inflation protection					5% Compound Inflation protection						
Issue Age	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail	Gross Premium	Valuation Premium	Renewal Expenses	Test Value	Pass/Fail		
42	\$896.67	\$389.32	\$161.28	\$346.07	Pass	\$1,975.35	\$1,235.35	\$282.99	\$457.01	Pass	\$4,109.42	\$3,047.68	\$523.90	\$537.84	Pass	42	
47	\$1,095.87	\$498.69	\$195.25	\$411.94	Pass	\$2,192.84	\$1,374.89	\$310.42	\$507.53	Pass	\$4,220.20	\$3,084.57	\$541.94	\$593.68	Pass	47	
52	\$1,294.96	\$647.65	\$146.31	\$501.00	Pass	\$2,411.21	\$1,553.11	\$220.67	\$637.44	Pass	\$4,332.93	\$3,170.91	\$348.72	\$813.31	Pass	52	
57	\$1,593.89	\$859.64	\$247.71	\$486.54	Pass	\$2,822.77	\$1,793.28	\$391.95	\$637.54	Pass	\$4,732.25	\$3,334.23	\$616.49	\$781.53	Pass	57	
62	\$2,291.35	\$1,142.67	\$336.87	\$811.81	Pass	\$3,592.83	\$2,067.40	\$493.24	\$1,032.18	Pass	\$5,529.02	\$3,495.93	\$726.72	\$1,306.37	Pass	62	
67	\$3,436.84	\$1,603.15	\$490.82	\$1,342.87	Pass	\$4,924.99	\$2,506.67	\$675.50	\$1,742.82	Pass	\$7,121.13	\$3,843.54	\$949.96	\$2,327.63	Pass	67	
72	\$5,827.79	\$2,491.28	\$825.91	\$2,510.59	Pass	\$7,593.61	\$3,379.29	\$1,052.96	\$3,161.35	Pass	\$10,163.66	\$4,726.52	\$1,389.03	\$4,048.11	Pass	72	
77	\$9,912.11	\$4,110.48	\$1,435.41	\$4,366.21	Pass	\$12,261.27	\$4,849.27	\$1,748.08	\$5,663.92	Pass	\$15,889.10	\$6,295.52	\$2,247.54	\$7,346.04	Pass	77	



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May 27, 2020

Bobby Toone  
Virginia Bureau of Insurance (Department)

Via SERFF

**Re: Massachusetts Mutual Life Insurance Company (MassMutual)**  
**Company NAIC # 65935**  
**SERFF Tracking # MILL-131569310**

<b>200 Series</b>	<b>Tax-Qualified Long-Term Care Policy Form</b>	<b>MM-200-P-VA et al.</b>
<b>300 Series</b>	<b>Tax-Qualified Long-Term Care Policy Form</b>	<b>MM-300-P-VA et al.</b>
<b>400 Series</b>	<b>Tax-Qualified Long-Term Care Policy Form</b>	<b>MM-400-P-VA et al.</b>
<b>500 Series</b>	<b>Tax-Qualified Comprehensive Long-Term Care Policy Form</b>	<b>MM500-P-VA et al.</b>
	<b>Tax-Qualified Facility Only Long-Term Care Policy Form</b>	<b>MM501-P-VA et al.</b>
<b>511 Series</b>	<b>Tax-Qualified Comprehensive Long-Term Care Policy Form</b>	<b>MM500-P-1-VA et al.</b>
	<b>Tax-Qualified Facility Only Long-Term Care Policy Form</b>	<b>MM501-P-1-VA et al.</b>

Dear Bobby:

Thank you for reviewing this filing. This letter is in response to your letter dated April 27, 2020 regarding information needed for the above-referenced filing. The remainder of this letter provides the additional information requested in your April 27 letter. The request is restated in *italics* for reference.

- Please provide all projections necessary to evaluate the requests based on both the Prospective Present Value Approach (or Texas Method) and the "If-Knew/Makeup Blend" approach (or Minnesota Method).*

The following provides the necessary projections along with formulae and development commentary to determine the increases justified for both the Texas and Minnesota Method approaches. Please note that nationwide experience is used in this response, as Virginia-specific experience is of limited credibility.

#### **Prospective Present Value Approach (Texas Method)**

Attachment 1-a to this letter provides the 200 Series loss ratio projection under the i) pricing and ii) current assumptions, which are used to create the values in Table 1. Attachments 1-b through 1-e provide similar information as Attachment 1-a, except for the 300, 400, 500, and 511 Series, respectively. Similar to Exhibit I of the August 30, 2018 actuarial memorandum, the maximum valuation interest rate for contract reserves applicable for the year of issue was used for accumulating and discounting both the pricing and current

Offices in Principal Cities Worldwide

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experience. As prescribed, only active insureds currently paying premium have been included. Note that as a conservative modeling simplification, no upward adjustment was made to the claim costs, which are appropriate for an all-lives exposure base, to account for the exposure base change of using active lives only at the start of the projection because we do not believe it is material for a block this young. Such an adjustment may be appropriate for future analyses.

Table 1 below provides the Present Value of Future Benefits (PVFB) and Present Value of Future Premiums (PVFP) nationwide under both current assumptions and original pricing assumptions.

**Table 1**  
**Active Lives Currently Paying Premium**  
**Projected Experience Before Requested Rate Increase**  
**Discounted to 12/31/2016 at Valuation Interest Rate<sup>[1]</sup>**  
**All Policy Forms**

Series	Assumption Basis	PVFB <sup>[2]</sup> [3]	PVFP <sup>[2]</sup>
200	Current	\$1,763,526,024	\$350,245,731
	Pricing	595,999,083	213,699,198
300	Current	1,558,600,952	335,766,426
	Pricing	494,523,481	207,932,850
400	Current	1,429,157,952	435,840,184
	Pricing	536,233,611	317,363,412
500	Current	1,294,177,285	651,273,613
	Pricing <sup>[4]</sup>	598,084,452	613,357,636
511	Current	331,246,748	261,358,707
	Pricing <sup>[4]</sup>	235,256,897	241,901,025

[1] The maximum valuation interest rate for contract reserves applicable for the year of issue (ranging from 3.5% to 4.5%) was used for discounting projected experience.

[2] The future period includes all projected experience on or after January 1, 2017.

[3] The change in PVFB is increased by 15% in the formulae below to reflect MAE.

[4] An 8.2% dividend margin has been applied to the future pricing benefits for 500 and 511 Series.

It is our understanding that the Department will use the values from Table 1 in a formula to determine the allowable rate increase using the Texas Method. To facilitate this calculation, we have provided Attachment 1 in Excel format. Additionally, the detailed Texas Method formula and an example calculation for the 200 Series are provided below for reference.

$$\text{rate increase \%} = \frac{(1 + \text{MAE}) * \Delta \text{PV}(\text{future incurred claims}) - \left( \frac{.58 + .85 * C}{1 + C} \right) * \Delta \text{PV}(\text{future earned premiums})}{.85 * \text{PV}_{\text{current}}(\text{future earned premiums})}$$

C = cumulative % rate increase to date nationwide

200 Series Texas Method justified increase:

$$424\% = \frac{1.15 * (1,763,526,024 - 595,999,083) - \left( \frac{.58 + .85 * 0\%}{1 + 0\%} \right) * (350,245,731 - 213,699,198)}{.85 * 350,245,731}$$

Table 2 below provides a comparison of the average rate increase being requested at this time in Virginia on each rate series, as shown in the initial submission cover letter, to the rate increase supported by the Texas Method's formula.

**Table 2**  
**Demonstration the Requested Rate Increase Passes the Texas Method's Formula**

Series	Average Virginia Rate Increase Request	Texas Method's Formula Supported Nationwide Increase
200	95%	424%
300	97	403
400	92	259
500	72	141
511	33	45

$$[1] (1 + [\text{Supported Increase}]) / (1 + [\text{Requested Increase}]) - 1$$

#### **If-Knew/Makeup Blend Approach (Minnesota Method)**

Attachment 2 of this response provides actual-to-expected (A:E) experience on a calendar year basis, which can be used to determine the components of the Minnesota Method formula. This A:E experience is identical to that underlying the tables provided in Section 16 of the actuarial memorandum. The experience in Attachment 2 uses the current interest assumption on a basis that is consistent with original pricing. Additional detail regarding the actual and expected experience underlying Attachment 2 can be found in Section 16 of the actuarial memorandum.

Table 3 below provides a summary of the proposed "if known" and proposed "make-up" increases for each rate series based on the values provided in Attachment 2. These components are necessary to compute a justified increase based on the Minnesota Method. Please note that the values for the proposed make-up increases in Table 3 below reflect an implementation date of January 1, 2019 consistent with the assumed implementation in the initial submission for this filing. Revising the implementation date to a more reasonable date given the progress of this filing would result in larger justified rate increases under the Minnesota Method. Because an implementation date of January 1, 2019 justifies an increase much larger than being requested, this date was not updated as part of this analysis as a simplification.

**Table 3**  
**Components for Minnesota Method by Series<sup>[1]</sup>**

Series	Proposed If Known <sup>[2]</sup>	Proposed Make-Up <sup>[3]</sup>
200	215%	909%
300	214	815
400	139	415
500	110	220
511	39	60

<sup>[1]</sup> Calculated without regard to contingent benefit upon lapse, reduced benefit option, adverse selection, and higher waiver claims due to the needed rate increase.

<sup>[2]</sup> Represents rate increase needed from inception based on current assumptions to reproduce the original pricing loss ratio.

<sup>[3]</sup> Represents rate increase needed assuming a January 1, 2019 implementation date and based on current assumptions to reproduce the original pricing loss ratio.

Because the Minnesota Method uses a blend of justified rate increases based on the percentage of insureds that are still in force, Table 4 below provides the total issued and in-force insured count nationwide as the valuation date of the experience used in this filing.

**Table 4**  
**Insured Count Nationwide as of December 31, 2016**

Series	In-Force	Total Issued	In-Force Percent
200	20,259	25,638	79%
300	17,295	20,737	83
400	14,522	17,748	82
500	18,339	20,746	88
511	6,605	7,259	91

It is our understanding that the Department will use the values from Table 3 and Table 4 in a formula to determine the allowable rate increase using the Minnesota Method. To facilitate this calculation, we have provided Attachment 2 in Excel format. Additionally, the detailed Minnesota Method formula and an example calculation for the 200 Series are provided below for reference:

proposed preliminary allowable increase % = proposed if-known % \* (1 - % in-force)  
+ proposed make-up % \* % in-force

$$\text{proposed if-known \%} = \frac{\left( \frac{\text{actual LR \%}}{\text{expected LR \%}} \right)}{1 + \text{average prior increase \%}} - 1$$

$$\text{proposed make-up \%} = \frac{1 + \text{rate increase needed to achieve original pricing LR \%}}{1 + \text{average prior increase \%}} - 1$$

$$\text{proposed total after cost sharing \%} = \frac{1 + (\text{First } 15\% * (1 - 0\%) + \text{Next } 35\% * (1 - 10\%) + \text{Next } 50\% * (1 - 25\%) + \text{Next } 50\% * (1 - 35\%) + \text{After } 150\% * (1 - 50\%))}{1 + \text{average prior increase \%}} - 1$$

200 Series Minnesota Method justified increase:

$$\text{proposed preliminary allowable} = 764\% = 215\% * (1 - 79\%) + 909\% * 79\%$$

$$\text{proposed if known} = 215\% = \frac{\left( \frac{171\%}{54\%} \right)}{1 + 0\%} - 1$$

$$\text{proposed make-up} = 909\% = \frac{1 + 909\%}{1 + 0\%} - 1$$

$$\text{proposed total after cost sharing} = 423\% = \frac{1 + (15\% * (1 - 0\%) + 35\% * (1 - 10\%) + 50\% * (1 - 25\%) + 50\% * (1 - 35\%) + (764\% - 150\%) * (1 - 50\%))}{1 + 0\%} - 1$$

Table 5 below provides a comparison of the average rate increase being requested at this time in Virginia on each rate series, as shown in the initial submission cover letter, to the rate increase supported by the Minnesota Method's formula.

**Table 5**  
**Demonstration the Requested Rate Increase Passes the Minnesota Method's Formula**

<b>Series</b>	<b>Average Virginia Rate Increase Request</b>	<b>Minnesota Method's Formula Supported Increase Nationwide</b>
200	95%	423%
300	97	399
400	92	224
500	72	145
511	33	53

2. *Please explain why, with all the concerns and press about Long-Term Care insurance rates, the company has [not] filed any previous rate increase requests.*

It was a difficult decision for the company to pursue rate increases on this block of business. A key consideration was how to strike a balance between early implementation and the amount of experience (company-specific and/or industrywide) needed to determine whether a rate increase is necessary. In some instances, it may be appropriate for a company to wait for more credible experience to arise before seeking premium increases. This is especially true for the morbidity assumption, which may not be accurately reflected in the early years of blocks' experience. The company believes that waiting for this experience to become more credible should not be considered the same as neglecting to file.

While this is the company's first rate increase request on this block of business, the brunt of the rate increase is being borne by the company, rather than by policyowners, as the company is only requesting a fraction of what is needed to return this block of business to the profitability expected in original pricing. The company acknowledges that the requested rate level is significant, but is offering a multitude of consumer-friendly options as part of this rate increase, which are outlined in the sample policyowner notification letter submitted to the Department on April 30, 2020.

### **Limitations and Qualifications**

Milliman's work has been prepared for the use and benefit of MassMutual. Milliman's work may not be provided to third parties without Milliman's prior written consent. Milliman does not intend to benefit any third party recipient of its work product, even if Milliman consents to the release of its work product to such third party.

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In performing this analysis, we relied on data and other information provided by MassMutual. We have not audited or verified this data and other information. If the underlying data or information is inaccurate or incomplete, the results of our analysis may likewise be inaccurate or incomplete. In that event, the results of our analysis may not be suitable for the intended purpose. We performed a limited review of the data used directly in our analysis for reasonableness and consistency and have not found material defects in the data. If there are material defects in the data, it is possible that they would be uncovered by a detailed, systematic review and comparison of the data to search for data values

that are questionable or for relationships that are materially inconsistent. Such a review was beyond the scope of our assignment.

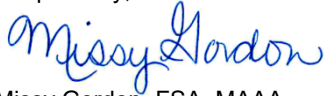
Differences between our projections and actual amounts depend on the extent to which future experience conforms to the assumptions made for this analysis. It is certain that actual experience will not conform exactly to the assumptions used in this analysis. Actual amounts will differ from projected amounts to the extent that actual experience deviates from expected experience.

I, Missy Gordon, am a Principal and Consulting Actuary for Milliman, Inc. I am a member of the American Academy of Actuaries and I meet the Qualification Standards of the American Academy of Actuaries to render an actuarial opinion as described herein.

❖❖❖

Bobby, thank you for working with us to complete this filing in Virginia. Please let me know if you have any additional questions. You can reach me directly at (952) 820-2478 or by e-mail at [missy.gordon@milliman.com](mailto:missy.gordon@milliman.com). Alternatively, you may contact Shawn Stender, the contact of record for this filing, at (952) 820-3104 or by e-mail at [shawn.stender@milliman.com](mailto:shawn.stender@milliman.com).

Respectfully,

A handwritten signature in blue ink that reads "Missy Gordon".

Missy Gordon, FSA, MAAA  
Principal and Consulting Actuary

MAG/ras

Attachment 1: Nationwide Active Lives Paying Premium Projected with Current and Pricing Assumptions

Attachment 2: Nationwide A:E Experience by Calendar Year

Enclosure: Experience Underlying Attachments 1 and 2 in Excel

**Attachment 1-a-i**  
**Massachusetts Mutual Life Insurance Company**  
**Nationwide Experience by Calendar Year**  
**Active Lives Currently Paying Premium Before Increase**  
**200 Rate Series**

	Calendar Year	Projected Experience using Pricing Assumptions				Cumulative Loss Ratio with interest
		A Earned Premium	B Incurred Claims	C = B / A Incurred Loss Ratio	D End of Year Lives	E Actual (Column C) with Max. Val. Interest
Projected Future Experience	2017	28,739,804	29,186,993	102%	16,617	102%
	2018	26,817,252	31,245,204	117%	15,469	109%
	2019	24,900,292	33,185,893	133%	14,345	116%
	2020	23,025,857	35,063,490	152%	13,255	123%
	2021	21,160,605	36,851,507	174%	12,201	131%
	2022	19,257,064	38,513,228	200%	11,190	139%
	2023	17,482,160	40,010,533	229%	10,224	148%
	2024	15,848,644	41,287,084	261%	9,304	156%
	2025	14,313,790	42,323,383	296%	8,431	165%
	2026	12,856,312	43,118,134	335%	7,606	173%
	2027	11,513,444	43,643,956	379%	6,829	181%
	2028	10,260,062	43,830,334	427%	6,102	190%
	2029	9,093,094	43,665,147	480%	5,425	198%
	2030	8,012,903	43,163,349	539%	4,798	206%
	2031	7,019,122	42,345,292	603%	4,220	213%
	2032	6,110,736	41,217,670	675%	3,690	220%
	2033	5,286,081	39,795,414	753%	3,209	227%
	2034	4,542,812	38,089,633	838%	2,774	233%
	2035	3,877,857	36,145,701	932%	2,383	239%
	2036	3,287,488	34,015,732	1,035%	2,035	244%
	2037	2,767,431	31,752,484	1,147%	1,726	249%
	2038	2,313,033	29,371,240	1,270%	1,456	254%
	2039	1,919,341	26,915,019	1,402%	1,219	257%
	2040	1,581,119	24,438,688	1,546%	1,015	261%
	2041	1,293,005	21,995,450	1,701%	840	264%
	2042	1,049,665	19,622,802	1,869%	690	267%
	2043	845,907	17,349,452	2,051%	563	269%
	2044	676,743	15,202,970	2,246%	457	271%
	2045	537,481	13,206,393	2,457%	369	272%
	2046	423,801	11,374,634	2,684%	296	274%
	2047	331,791	9,717,696	2,929%	235	275%
	2048	257,933	8,236,440	3,193%	186	276%
	2049	199,111	6,928,104	3,480%	147	276%
	2050	152,625	5,783,003	3,789%	115	277%
	2051	116,188	4,790,399	4,123%	90	277%
	2052	87,855	3,939,121	4,484%	69	278%
	2053	65,990	3,213,699	4,870%	54	278%
	2054	49,241	2,603,719	5,288%	41	278%
	2055	36,504	2,094,900	5,739%	31	278%
	2056	26,884	1,675,425	6,232%	24	278%
	2057	19,668	1,331,907	6,772%	18	279%
	2058	14,291	1,053,040	7,368%	14	279%
	2059	10,311	829,105	8,041%	10	279%
	2060	7,383	649,284	8,794%	8	279%
	2061	5,246	505,098	9,628%	6	279%
	2062	3,698	390,473	10,560%	4	279%
	2063	2,585	299,826	11,600%	3	279%
	2064	1,791	229,023	12,788%	2	279%
	2065	1,229	173,552	14,119%	2	279%
	2066	835	130,712	15,649%	1	279%
	2067	562	97,654	17,380%	1	279%
	2068	374	72,068	19,276%	1	279%
	2069	246	52,575	21,381%	0	279%
	2070	160	37,642	23,563%	0	279%
	2071	102	26,425	25,830%	0	279%
	2072	64	18,119	28,172%	0	279%
	2073	40	12,025	30,409%	0	279%
	2074	24	7,784	32,796%	0	279%
	2075	14	4,789	34,352%	0	279%
	2076	8	2,869	35,701%	0	279%

**With Interest Accum./Disc. To 12/31/2016 at Max. Val. Interest**

Future (2017+)	213,699,198	595,999,083	279%
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**Attachment 1-a-ii**  
**Massachusetts Mutual Life Insurance Company**  
**Nationwide Experience by Calendar Year**  
**Active Lives Currently Paying Premium Before Increase**  
**200 Rate Series**

	Calendar Year	Projected Experience using Current Assumptions				Cumulative Loss Ratio with interest
		A Earned Premium	B Incurred Claims	C = B / A Incurred Loss Ratio	D End of Year Lives	E Actual (Column C) with Max. Val. Interest
Projected Future Experience	2017	29,887,765	23,782,219	80%	17,442	80%
	2018	29,349,136	27,699,032	94%	17,112	87%
	2019	28,777,625	32,184,217	112%	16,763	95%
	2020	28,168,332	37,220,752	132%	16,394	103%
	2021	27,474,348	42,679,846	155%	16,005	112%
	2022	26,634,000	48,635,936	183%	15,596	122%
	2023	25,816,698	55,146,050	214%	15,166	132%
	2024	25,030,162	62,246,351	249%	14,716	144%
	2025	24,228,738	70,006,145	289%	14,246	155%
	2026	23,389,285	78,150,976	334%	13,754	168%
	2027	22,548,531	87,169,875	387%	13,239	181%
	2028	21,675,834	97,250,295	449%	12,700	195%
	2029	20,763,840	107,774,187	519%	12,138	210%
	2030	19,814,554	118,225,613	597%	11,553	226%
	2031	18,830,887	128,478,481	682%	10,949	242%
	2032	17,816,967	138,238,763	776%	10,328	259%
	2033	16,777,912	147,332,735	878%	9,694	276%
	2034	15,719,863	155,619,312	990%	9,051	293%
	2035	14,649,575	162,608,592	1,110%	8,405	310%
	2036	13,574,866	167,901,306	1,237%	7,759	327%
	2037	12,504,079	171,349,126	1,370%	7,119	343%
	2038	11,445,703	172,857,288	1,510%	6,491	359%
	2039	10,408,621	172,459,398	1,657%	5,880	375%
	2040	9,401,540	170,193,431	1,810%	5,290	389%
	2041	8,432,444	166,157,828	1,970%	4,727	403%
	2042	7,508,745	160,406,360	2,136%	4,193	415%
	2043	6,636,871	153,120,489	2,307%	3,694	427%
	2044	5,822,104	144,721,929	2,486%	3,230	437%
	2045	5,068,149	135,557,030	2,675%	2,803	447%
	2046	4,377,640	125,786,875	2,873%	2,415	455%
	2047	3,751,771	115,623,454	3,082%	2,065	463%
	2048	3,190,085	105,136,677	3,296%	1,752	469%
	2049	2,691,237	94,712,593	3,519%	1,476	475%
	2050	2,252,578	84,625,809	3,757%	1,235	480%
	2051	1,870,179	75,065,045	4,014%	1,025	484%
	2052	1,539,126	66,088,687	4,294%	845	488%
	2053	1,254,478	57,572,196	4,589%	691	491%
	2054	1,013,684	49,712,300	4,904%	562	493%
	2055	812,526	42,587,388	5,241%	454	495%
	2056	646,326	36,270,761	5,612%	364	497%
	2057	509,809	30,698,316	6,022%	290	498%
	2058	398,771	25,760,638	6,460%	230	499%
	2059	310,119	21,436,059	6,912%	181	500%
	2060	239,403	17,731,092	7,406%	141	501%
	2061	183,599	14,618,602	7,962%	110	502%
	2062	139,933	11,988,365	8,567%	85	502%
	2063	105,829	9,731,571	9,196%	65	502%
	2064	79,491	7,824,669	9,843%	50	503%
	2065	59,405	6,241,808	10,507%	38	503%
	2066	44,141	4,944,089	11,201%	29	503%
	2067	32,478	3,876,495	11,936%	22	503%
	2068	23,737	3,012,776	12,692%	16	503%
	2069	17,248	2,317,662	13,437%	12	503%
	2070	12,365	1,755,801	14,200%	9	503%
	2071	8,823	1,317,371	14,931%	6	503%
	2072	6,227	973,322	15,631%	5	503%
	2073	4,282	700,938	16,370%	3	503%
	2074	2,932	503,721	17,178%	2	503%
	2075	2,002	359,506	17,960%	2	504%
	2076	1,323	249,512	18,856%	1	504%

**With Interest Accum./Disc. To 12/31/2016 at Max. Val. Interest**

Future (2017+)	350,245,731	1,763,526,024	504%
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**Attachment 1-b-i**  
**Massachusetts Mutual Life Insurance Company**  
**Nationwide Experience by Calendar Year**  
**Active Lives Currently Paying Premium Before Increase**  
**300 Rate Series**

	Calendar Year	Projected Experience using Pricing Assumptions				Cumulative Loss Ratio with interest
		A Earned Premium	B Incurred Claims	C = B / A Incurred Loss Ratio	D End of Year Lives	E Actual (Column C) with Max. Val. Interest
Projected Future Experience	2017	25,724,196	18,089,993	70%	13,343	70%
	2018	24,331,241	19,831,228	82%	12,603	76%
	2019	22,917,272	21,680,007	95%	11,843	81%
	2020	21,459,338	23,543,481	110%	11,062	87%
	2021	19,992,019	25,306,729	127%	10,297	94%
	2022	18,561,308	27,027,691	146%	9,556	100%
	2023	17,161,167	28,743,875	167%	8,840	107%
	2024	15,759,442	30,411,923	193%	8,149	114%
	2025	14,280,141	31,993,721	224%	7,484	121%
	2026	13,011,945	33,462,367	257%	6,847	128%
	2027	11,835,296	34,767,705	294%	6,239	135%
	2028	10,713,826	35,843,158	335%	5,659	143%
	2029	9,649,962	36,664,168	380%	5,110	150%
	2030	8,645,898	37,205,035	430%	4,592	157%
	2031	7,703,405	37,455,131	486%	4,106	164%
	2032	6,823,855	37,410,100	548%	3,652	171%
	2033	6,008,130	37,073,824	617%	3,230	178%
	2034	5,256,635	36,433,808	693%	2,841	184%
	2035	4,569,240	35,500,765	777%	2,485	190%
	2036	3,945,167	34,291,539	869%	2,160	196%
	2037	3,382,969	32,837,574	971%	1,867	201%
	2038	2,880,593	31,157,868	1,082%	1,604	206%
	2039	2,435,416	29,291,257	1,203%	1,369	210%
	2040	2,044,262	27,278,960	1,334%	1,161	214%
	2041	1,703,501	25,176,051	1,478%	979	218%
	2042	1,409,187	23,025,702	1,634%	820	221%
	2043	1,157,189	20,873,378	1,804%	682	224%
	2044	943,294	18,752,330	1,988%	564	226%
	2045	763,311	16,688,109	2,186%	463	228%
	2046	613,175	14,716,693	2,400%	378	230%
	2047	489,013	12,866,640	2,631%	307	232%
	2048	387,191	11,159,716	2,882%	247	233%
	2049	304,367	9,602,243	3,155%	198	234%
	2050	237,545	8,196,394	3,450%	158	235%
	2051	184,075	6,943,294	3,772%	125	235%
	2052	141,638	5,837,639	4,122%	98	236%
	2053	108,225	4,870,156	4,500%	76	236%
	2054	82,120	4,029,878	4,907%	59	237%
	2055	61,879	3,304,710	5,341%	46	237%
	2056	46,298	2,686,338	5,802%	35	237%
	2057	34,392	2,165,878	6,298%	27	237%
	2058	25,360	1,733,097	6,834%	20	237%
	2059	18,558	1,375,158	7,410%	15	238%
	2060	13,472	1,081,811	8,030%	11	238%
	2061	9,700	844,076	8,702%	8	238%
	2062	6,922	652,607	9,428%	6	238%
	2063	4,894	499,437	10,205%	4	238%
	2064	3,426	377,691	11,024%	3	238%
	2065	2,373	283,061	11,930%	2	238%
	2066	1,624	210,719	12,974%	2	238%
	2067	1,098	155,836	14,193%	1	238%
	2068	733	114,696	15,657%	1	238%
	2069	482	83,681	17,365%	1	238%
	2070	312	60,456	19,373%	0	238%
	2071	199	42,979	21,646%	0	238%
	2072	124	29,955	24,189%	0	238%
	2073	76	20,415	27,036%	0	238%
	2074	45	13,573	30,318%	0	238%
	2075	26	8,828	34,418%	0	238%
	2076	14	5,545	39,207%	0	238%

**With Interest Accum./Disc. To 12/31/2016 at Max. Val. Interest**

Future (2017+)	207,932,850	494,523,481	238%
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**Attachment 1-b-ii**  
**Massachusetts Mutual Life Insurance Company**  
**Nationwide Experience by Calendar Year**  
**Active Lives Currently Paying Premium Before Increase**  
**300 Rate Series**

	Calendar Year	Projected Experience using Current Assumptions				Cumulative Loss Ratio with interest
		A Earned Premium	B Incurred Claims	C = B / A Incurred Loss Ratio	D End of Year Lives	E Actual (Column C) with Max. Val. Interest
Projected Future Experience	2017	26,621,439	12,415,518	47%	13,892	47%
	2018	26,246,553	15,119,720	58%	13,688	52%
	2019	25,851,158	18,196,833	70%	13,473	58%
	2020	25,434,344	21,508,242	85%	13,246	64%
	2021	24,993,717	25,108,825	100%	13,006	70%
	2022	24,527,682	29,156,696	119%	12,752	77%
	2023	24,018,025	33,704,989	140%	12,484	85%
	2024	23,428,407	38,807,675	166%	12,201	93%
	2025	22,684,339	44,529,589	196%	11,904	101%
	2026	22,076,412	50,924,175	231%	11,592	111%
	2027	21,479,690	58,481,871	272%	11,261	121%
	2028	20,850,114	67,135,087	322%	10,911	132%
	2029	20,183,378	76,561,404	379%	10,540	144%
	2030	19,478,441	86,860,364	446%	10,149	157%
	2031	18,734,783	97,846,544	522%	9,737	171%
	2032	17,952,919	108,950,799	607%	9,305	186%
	2033	17,134,173	120,113,772	701%	8,855	201%
	2034	16,280,974	131,038,363	805%	8,389	217%
	2035	15,396,880	141,391,586	918%	7,908	234%
	2036	14,486,692	150,850,885	1,041%	7,415	251%
	2037	13,556,146	159,106,687	1,174%	6,916	267%
	2038	12,611,964	165,977,912	1,316%	6,412	284%
	2039	11,662,285	170,979,319	1,466%	5,910	301%
	2040	10,715,140	173,652,825	1,621%	5,412	317%
	2041	9,779,474	174,113,241	1,780%	4,924	332%
	2042	8,863,519	172,739,457	1,949%	4,450	346%
	2043	7,975,743	169,705,897	2,128%	3,994	360%
	2044	7,123,903	164,875,918	2,314%	3,559	373%
	2045	6,315,158	158,311,723	2,507%	3,149	384%
	2046	5,555,499	150,379,518	2,707%	2,766	395%
	2047	4,849,619	141,671,033	2,921%	2,412	405%
	2048	4,200,454	132,388,034	3,152%	2,087	414%
	2049	3,609,927	122,525,144	3,394%	1,794	421%
	2050	3,078,116	112,063,494	3,641%	1,530	428%
	2051	2,604,743	101,504,838	3,897%	1,296	434%
	2052	2,187,118	91,255,834	4,172%	1,090	439%
	2053	1,822,231	81,631,280	4,480%	910	444%
	2054	1,504,534	72,460,213	4,816%	755	447%
	2055	1,229,067	63,525,990	5,169%	622	451%
	2056	995,494	55,105,273	5,535%	508	453%
	2057	799,914	47,396,383	5,925%	412	455%
	2058	637,511	40,605,535	6,369%	332	457%
	2059	504,564	34,637,335	6,865%	266	459%
	2060	396,525	29,231,878	7,372%	212	460%
	2061	309,354	24,411,873	7,891%	167	461%
	2062	239,536	20,237,804	8,449%	131	462%
	2063	184,171	16,746,015	9,093%	102	462%
	2064	140,272	13,769,591	9,816%	79	463%
	2065	106,101	11,205,256	10,561%	60	463%
	2066	79,699	8,992,057	11,283%	46	463%
	2067	59,316	7,131,731	12,023%	35	464%
	2068	43,863	5,615,060	12,801%	26	464%
	2069	32,143	4,397,363	13,681%	19	464%
	2070	23,296	3,401,893	14,603%	14	464%
	2071	16,723	2,592,584	15,503%	10	464%
	2072	11,866	1,937,146	16,325%	7	464%
	2073	8,396	1,435,614	17,098%	5	464%
	2074	5,755	1,030,499	17,907%	4	464%
	2075	3,904	730,900	18,720%	2	464%
	2076	2,601	517,777	19,906%	2	464%

**With Interest Accum./Disc. To 12/31/2016 at Max. Val. Interest**

Future (2017+)	335,766,426	1,558,600,952	464%
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**Attachment 1-c-i**  
**Massachusetts Mutual Life Insurance Company**  
**Nationwide Experience by Calendar Year**  
**Active Lives Currently Paying Premium Before Increase**  
**400 Rate Series**

	Calendar Year	Projected Experience using Pricing Assumptions				Cumulative Loss Ratio with interest
		A Earned Premium	B Incurred Claims	C = B / A Incurred Loss Ratio	D End of Year Lives	E Actual (Column C) with Max. Val. Interest
Projected Future Experience	2017	35,776,793	9,691,142	27%	13,100	27%
	2018	30,266,712	10,769,306	36%	12,670	31%
	2019	27,488,861	11,971,956	44%	12,238	34%
	2020	26,275,391	13,298,417	51%	11,802	38%
	2021	25,240,477	14,756,319	58%	11,363	41%
	2022	24,198,755	16,336,727	68%	10,920	44%
	2023	23,150,782	18,033,096	78%	10,474	48%
	2024	22,097,363	19,840,096	90%	10,024	52%
	2025	21,030,038	21,754,417	103%	9,572	55%
	2026	19,897,457	23,771,881	119%	9,118	60%
	2027	18,735,883	25,868,734	138%	8,663	64%
	2028	17,546,428	27,986,005	159%	8,206	68%
	2029	16,411,342	30,107,617	183%	7,750	73%
	2030	15,365,149	32,206,369	210%	7,295	78%
	2031	14,329,231	34,244,568	239%	6,843	83%
	2032	13,306,885	36,176,331	272%	6,395	88%
	2033	12,302,195	37,949,063	308%	5,952	93%
	2034	11,319,350	39,524,315	349%	5,517	98%
	2035	10,362,671	40,863,041	394%	5,091	103%
	2036	9,436,535	41,926,880	444%	4,676	108%
	2037	8,545,264	42,691,752	500%	4,274	113%
	2038	7,693,090	43,115,502	560%	3,887	118%
	2039	6,883,939	43,184,169	627%	3,516	122%
	2040	6,121,163	42,906,392	701%	3,163	127%
	2041	5,407,468	42,293,091	782%	2,830	131%
	2042	4,744,922	41,347,285	871%	2,516	135%
	2043	4,134,887	40,080,407	969%	2,225	139%
	2044	3,577,914	38,519,006	1,077%	1,954	143%
	2045	3,073,756	36,693,348	1,194%	1,706	146%
	2046	2,621,446	34,631,945	1,321%	1,481	149%
	2047	2,219,320	32,383,589	1,459%	1,276	152%
	2048	1,865,092	29,994,504	1,608%	1,093	155%
	2049	1,555,945	27,528,916	1,769%	931	157%
	2050	1,288,628	25,044,827	1,944%	787	159%
	2051	1,059,593	22,594,436	2,132%	662	160%
	2052	865,127	20,219,556	2,337%	553	162%
	2053	701,477	17,951,386	2,559%	459	163%
	2054	564,947	15,813,037	2,799%	379	164%
	2055	451,990	13,825,856	3,059%	312	165%
	2056	359,287	11,998,001	3,339%	255	166%
	2057	283,790	10,334,381	3,642%	207	166%
	2058	222,757	8,832,418	3,965%	167	167%
	2059	173,761	7,491,449	4,311%	134	167%
	2060	134,687	6,308,933	4,684%	108	168%
	2061	103,725	5,276,322	5,087%	86	168%
	2062	79,348	4,382,087	5,523%	68	168%
	2063	60,281	3,613,212	5,994%	54	168%
	2064	45,469	2,956,501	6,502%	42	169%
	2065	34,042	2,400,394	7,051%	33	169%
	2066	25,289	1,934,645	7,650%	26	169%
	2067	18,636	1,548,170	8,308%	20	169%
	2068	13,620	1,231,306	9,041%	16	169%
	2069	9,871	974,188	9,869%	12	169%
	2070	7,095	767,101	10,812%	10	169%
	2071	5,058	601,658	11,895%	8	169%
	2072	3,577	470,917	13,164%	6	169%
	2073	2,510	367,866	14,654%	5	169%
	2074	1,748	286,667	16,396%	4	169%
	2075	1,209	222,225	18,383%	3	169%
	2076	830	171,983	20,720%	2	169%

**With Interest Accum./Disc. To 12/31/2016 at Max. Val. Interest**

Future (2017+)	317,363,412	536,233,611	169%
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**Attachment 1-c-ii**  
**Massachusetts Mutual Life Insurance Company**  
**Nationwide Experience by Calendar Year**  
**Active Lives Currently Paying Premium Before Increase**  
**400 Rate Series**

	Calendar Year	Projected Experience using Current Assumptions				Cumulative Loss Ratio with interest
		A Earned Premium	B Incurred Claims	C = B / A Incurred Loss Ratio	D End of Year Lives	E Actual (Column C) with Max. Val. Interest
Projected Future Experience	2017	36,490,956	7,062,389	19%	13,378	19%
	2018	31,646,551	8,498,730	27%	13,217	23%
	2019	29,529,936	10,292,264	35%	13,050	26%
	2020	28,992,958	12,394,432	43%	12,873	30%
	2021	28,628,561	14,754,397	52%	12,687	33%
	2022	28,244,389	17,359,983	61%	12,491	37%
	2023	27,838,453	20,301,669	73%	12,283	41%
	2024	27,408,430	23,622,230	86%	12,063	46%
	2025	26,942,776	27,390,758	102%	11,830	51%
	2026	26,387,599	31,619,091	120%	11,584	56%
	2027	25,774,266	36,582,325	142%	11,323	61%
	2028	25,098,087	42,436,988	169%	11,045	68%
	2029	24,434,316	49,024,494	201%	10,751	74%
	2030	23,814,104	56,305,304	236%	10,438	82%
	2031	23,151,431	64,261,847	278%	10,106	90%
	2032	22,443,457	72,868,061	325%	9,755	98%
	2033	21,688,834	82,085,838	378%	9,386	108%
	2034	20,886,957	91,786,342	439%	8,997	117%
	2035	20,038,273	101,567,342	507%	8,592	128%
	2036	19,144,475	111,280,086	581%	8,170	138%
	2037	18,208,392	120,854,473	664%	7,734	150%
	2038	17,234,217	129,995,799	754%	7,286	161%
	2039	16,227,913	138,495,537	853%	6,829	173%
	2040	15,196,823	145,859,808	960%	6,367	185%
	2041	14,148,588	151,889,597	1,074%	5,903	196%
	2042	13,092,349	156,261,416	1,194%	5,440	208%
	2043	12,037,571	158,741,256	1,319%	4,983	219%
	2044	10,994,323	159,438,354	1,450%	4,535	230%
	2045	9,972,374	158,458,684	1,589%	4,101	241%
	2046	8,981,246	155,818,098	1,735%	3,684	251%
	2047	8,029,905	151,530,184	1,887%	3,287	260%
	2048	7,126,535	145,617,345	2,043%	2,912	268%
	2049	6,276,917	138,452,755	2,206%	2,563	276%
	2050	5,486,373	130,385,776	2,377%	2,239	283%
	2051	4,758,334	121,654,343	2,557%	1,942	290%
	2052	4,095,005	112,408,979	2,745%	1,673	295%
	2053	3,496,881	102,767,515	2,939%	1,431	300%
	2054	2,963,397	93,114,608	3,142%	1,215	305%
	2055	2,492,042	83,828,423	3,364%	1,025	309%
	2056	2,077,199	74,966,655	3,609%	859	312%
	2057	1,714,493	66,584,779	3,884%	715	315%
	2058	1,400,213	58,460,660	4,175%	591	317%
	2059	1,134,036	50,859,660	4,485%	486	319%
	2060	911,870	43,924,526	4,817%	397	321%
	2061	727,841	37,691,860	5,179%	322	322%
	2062	577,003	32,164,800	5,574%	260	324%
	2063	454,493	27,196,432	5,984%	208	324%
	2064	355,843	22,793,240	6,405%	166	325%
	2065	276,482	18,951,486	6,855%	132	326%
	2066	213,491	15,668,605	7,339%	104	326%
	2067	163,778	12,896,344	7,874%	81	327%
	2068	124,702	10,502,599	8,422%	63	327%
	2069	94,366	8,470,822	8,977%	49	327%
	2070	70,836	6,762,184	9,546%	38	327%
	2071	52,754	5,361,502	10,163%	29	328%
	2072	38,971	4,220,151	10,829%	22	328%
	2073	28,636	3,309,775	11,558%	17	328%
	2074	20,738	2,554,497	12,318%	13	328%
	2075	14,821	1,936,133	13,063%	9	328%
	2076	10,507	1,454,264	13,841%	7	328%

**With Interest Accum./Disc. To 12/31/2016 at Max. Val. Interest**

Future (2017+)	435,840,184	1,429,157,952	328%
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**Attachment 1-d-i**  
**Massachusetts Mutual Life Insurance Company**  
**Nationwide Experience by Calendar Year**  
**Active Lives Currently Paying Premium Before Increase**  
**500 Rate Series**

		Projected Experience using Pricing Assumptions				Cumulative Loss Ratio with interest
	Calendar Year	A  Earned Premium	B  Incurred Claims	C = B / A  Incurred Loss Ratio	D  End of Year Lives	E  Actual (Column C) with Max. Val. Interest
Projected Future Experience	2017	58,017,449	3,194,228	6%	18,095	6%
	2018	57,129,896	3,942,309	7%	17,895	6%
	2019	54,755,761	4,738,007	9%	17,700	7%
	2020	51,388,022	5,650,133	11%	17,501	8%
	2021	46,803,637	6,561,112	14%	17,292	9%
	2022	39,448,059	7,583,037	19%	17,065	10%
	2023	37,847,337	8,838,283	23%	16,817	11%
	2024	36,913,777	10,308,108	28%	16,548	13%
	2025	35,920,741	12,035,814	34%	16,261	14%
	2026	34,904,247	14,062,937	40%	15,954	16%
	2027	33,826,611	16,427,401	49%	15,625	18%
	2028	32,729,392	19,182,428	59%	15,273	20%
	2029	31,594,419	22,168,384	70%	14,896	22%
	2030	30,389,489	25,437,271	84%	14,493	24%
	2031	29,132,478	28,934,347	99%	14,062	27%
	2032	27,814,675	32,588,335	117%	13,602	30%
	2033	26,499,438	36,365,939	137%	13,113	32%
	2034	25,140,214	40,081,437	159%	12,596	36%
	2035	23,741,670	43,900,523	185%	12,052	39%
	2036	22,302,770	47,623,641	214%	11,482	42%
	2037	20,865,741	51,097,185	245%	10,888	46%
	2038	19,418,789	54,301,061	280%	10,275	49%
	2039	17,965,072	57,168,674	318%	9,646	53%
	2040	16,525,678	59,595,859	361%	9,006	56%
	2041	15,103,144	61,352,525	406%	8,361	60%
	2042	13,714,454	62,363,769	455%	7,717	63%
	2043	12,377,052	62,735,980	507%	7,079	66%
	2044	11,096,529	62,434,749	563%	6,454	69%
	2045	9,881,531	61,537,529	623%	5,847	72%
	2046	8,739,790	60,021,534	687%	5,263	75%
	2047	7,678,144	57,979,090	755%	4,707	78%
	2048	6,701,247	55,490,232	828%	4,183	80%
	2049	5,810,005	52,597,135	905%	3,695	83%
	2050	5,004,665	49,404,953	987%	3,244	85%
	2051	4,284,342	45,982,768	1,073%	2,830	86%
	2052	3,646,238	42,443,501	1,164%	2,456	88%
	2053	3,085,953	38,811,706	1,258%	2,120	89%
	2054	2,598,237	35,221,290	1,356%	1,820	91%
	2055	2,177,174	31,796,761	1,460%	1,556	92%
	2056	1,816,352	28,551,327	1,572%	1,323	93%
	2057	1,509,205	25,476,601	1,688%	1,121	93%
	2058	1,249,482	22,585,189	1,808%	945	94%
	2059	1,031,243	19,970,162	1,937%	795	95%
	2060	848,822	17,589,816	2,072%	665	95%
	2061	697,087	15,411,705	2,211%	555	96%
	2062	571,367	13,425,646	2,350%	462	96%
	2063	467,677	11,622,367	2,485%	384	96%
	2064	382,299	10,048,476	2,628%	318	96%
	2065	311,999	8,654,241	2,774%	263	97%
	2066	254,207	7,406,416	2,914%	217	97%
	2067	206,863	6,314,979	3,053%	178	97%
	2068	168,035	5,361,356	3,191%	146	97%
	2069	136,068	4,532,026	3,331%	120	97%
	2070	109,767	3,817,206	3,478%	98	97%
	2071	88,120	3,203,140	3,635%	80	97%
	2072	70,344	2,668,270	3,793%	65	97%
	2073	55,803	2,200,999	3,944%	52	97%
	2074	43,907	1,808,354	4,119%	42	97%
	2075	34,259	1,472,890	4,299%	34	97%
	2076	26,526	1,187,168	4,475%	27	98%

**With Interest Accum./Disc. To 12/31/2016 at Max. Val. Interest**

Future (2017+)	613,357,636	598,084,452	98%
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**Attachment 1-d-ii**  
**Massachusetts Mutual Life Insurance Company**  
**Nationwide Experience by Calendar Year**  
**Active Lives Currently Paying Premium Before Increase**  
**500 Rate Series**

	Calendar Year	Projected Experience using Current Assumptions				Cumulative Loss Ratio with interest
		A Earned Premium	B Incurred Claims	C = B / A Incurred Loss Ratio	D End of Year Lives	E Actual (Column C) with Max. Val. Interest
Projected Future Experience	2017	58,157,980	4,533,179	8%	18,048	8%
	2018	57,156,081	5,352,084	9%	17,824	9%
	2019	54,745,003	6,455,583	12%	17,615	10%
	2020	51,424,148	7,734,206	15%	17,413	11%
	2021	46,988,148	9,220,827	20%	17,207	12%
	2022	39,946,327	10,893,816	27%	16,991	14%
	2023	38,517,491	12,852,773	33%	16,762	16%
	2024	37,762,070	15,129,833	40%	16,521	18%
	2025	36,960,314	17,756,379	48%	16,264	20%
	2026	36,145,205	20,762,633	57%	15,991	22%
	2027	35,281,398	24,370,413	69%	15,698	25%
	2028	34,407,639	28,655,858	83%	15,385	28%
	2029	33,499,548	33,557,190	100%	15,048	31%
	2030	32,524,445	39,087,079	120%	14,689	35%
	2031	31,496,850	45,284,328	144%	14,304	39%
	2032	30,408,385	52,168,458	172%	13,895	43%
	2033	29,316,438	59,763,832	204%	13,460	48%
	2034	28,170,476	68,071,213	242%	12,998	53%
	2035	26,969,860	76,942,529	285%	12,510	59%
	2036	25,710,012	86,238,678	335%	11,997	65%
	2037	24,428,119	95,884,666	393%	11,458	71%
	2038	23,108,296	105,674,582	457%	10,897	77%
	2039	21,750,243	115,170,322	530%	10,316	84%
	2040	20,371,288	124,174,933	610%	9,719	91%
	2041	18,972,586	132,459,220	698%	9,110	99%
	2042	17,569,148	139,763,357	796%	8,493	106%
	2043	16,176,153	145,870,712	902%	7,875	113%
	2044	14,802,467	150,459,064	1,016%	7,259	121%
	2045	13,459,484	153,421,425	1,140%	6,651	128%
	2046	12,159,139	154,579,500	1,271%	6,058	135%
	2047	10,912,019	153,826,997	1,410%	5,483	142%
	2048	9,727,482	151,224,052	1,555%	4,932	148%
	2049	8,613,431	147,158,315	1,708%	4,408	154%
	2050	7,575,803	141,737,732	1,871%	3,916	159%
	2051	6,618,830	135,178,680	2,042%	3,456	164%
	2052	5,744,937	127,516,789	2,220%	3,032	169%
	2053	4,954,581	119,186,178	2,406%	2,645	173%
	2054	4,246,419	110,462,986	2,601%	2,293	176%
	2055	3,617,942	101,556,690	2,807%	1,977	180%
	2056	3,065,386	92,612,618	3,021%	1,695	183%
	2057	2,583,569	83,815,554	3,244%	1,446	185%
	2058	2,166,872	75,428,486	3,481%	1,228	187%
	2059	1,809,971	67,513,452	3,730%	1,038	189%
	2060	1,506,325	60,105,202	3,990%	875	191%
	2061	1,249,368	53,242,446	4,262%	734	192%
	2062	1,033,500	46,839,452	4,532%	614	193%
	2063	853,265	41,028,716	4,808%	512	194%
	2064	703,453	35,818,937	5,092%	426	195%
	2065	578,976	31,206,304	5,390%	354	196%
	2066	476,057	27,141,061	5,701%	293	196%
	2067	391,067	23,494,106	6,008%	242	197%
	2068	321,044	20,287,803	6,319%	199	197%
	2069	263,024	17,437,941	6,630%	164	198%
	2070	214,964	14,967,841	6,963%	135	198%
	2071	175,371	12,794,604	7,296%	110	198%
	2072	142,710	10,843,175	7,598%	90	198%
	2073	115,709	9,136,619	7,896%	73	198%
	2074	93,264	7,622,786	8,173%	59	199%
	2075	74,725	6,321,848	8,460%	48	199%
	2076	59,508	5,200,041	8,738%	38	199%

**With Interest Accum./Disc. To 12/31/2016 at Max. Val. Interest**

Future (2017+)	651,273,613	1,294,177,285	199%
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**Attachment 1-e-i**  
**Massachusetts Mutual Life Insurance Company**  
**Nationwide Experience by Calendar Year**  
**Active Lives Currently Paying Premium Before Increase**  
**511 Rate Series**

		Projected Experience using Pricing Assumptions				Cumulative Loss Ratio with interest
	Calendar Year	A Earned Premium	B Incurred Claims	C = B / A Incurred Loss Ratio	D End of Year Lives	E Actual (Column C) with Max. Val. Interest
Projected Future Experience	2017	18,929,492	1,156,955	6%	6,480	6%
	2018	18,606,928	1,372,839	7%	6,377	7%
	2019	18,304,332	1,521,804	8%	6,278	7%
	2020	18,009,560	1,734,960	10%	6,181	8%
	2021	17,723,591	2,024,352	11%	6,089	8%
	2022	16,136,167	2,337,062	14%	6,000	9%
	2023	14,552,047	2,661,336	18%	5,912	10%
	2024	14,259,242	3,056,986	21%	5,823	11%
	2025	13,965,174	3,565,371	26%	5,729	12%
	2026	13,651,086	4,099,384	30%	5,631	14%
	2027	13,311,263	4,663,464	35%	5,526	15%
	2028	12,960,291	5,340,130	41%	5,415	16%
	2029	12,599,048	6,106,261	48%	5,297	18%
	2030	12,213,370	6,977,303	57%	5,172	20%
	2031	11,808,748	7,948,334	67%	5,039	21%
	2032	11,385,756	8,989,734	79%	4,898	23%
	2033	10,938,546	10,094,355	92%	4,749	26%
	2034	10,478,094	11,272,467	108%	4,591	28%
	2035	10,001,347	12,539,448	125%	4,425	30%
	2036	9,512,104	13,850,539	146%	4,251	33%
	2037	9,009,444	15,179,330	168%	4,069	36%
	2038	8,494,576	16,494,274	194%	3,880	38%
	2039	7,971,093	17,810,537	223%	3,684	41%
	2040	7,442,867	19,102,864	257%	3,483	44%
	2041	6,913,779	20,355,940	294%	3,278	47%
	2042	6,387,504	21,494,496	337%	3,070	51%
	2043	5,868,275	22,463,912	383%	2,861	54%
	2044	5,360,640	23,257,621	434%	2,652	57%
	2045	4,868,383	23,922,228	491%	2,444	60%
	2046	4,395,075	24,390,509	555%	2,241	63%
	2047	3,943,780	24,578,826	623%	2,043	66%
	2048	3,517,052	24,566,848	699%	1,851	69%
	2049	3,117,211	24,359,894	781%	1,668	72%
	2050	2,746,034	23,963,259	873%	1,493	75%
	2051	2,404,090	23,362,444	972%	1,330	77%
	2052	2,091,670	22,559,560	1,079%	1,177	80%
	2053	1,808,711	21,551,597	1,192%	1,035	82%
	2054	1,554,698	20,431,649	1,314%	905	84%
	2055	1,328,651	19,159,959	1,442%	787	86%
	2056	1,129,231	17,832,888	1,579%	681	87%
	2057	954,672	16,439,609	1,722%	585	89%
	2058	803,183	15,016,175	1,870%	501	90%
	2059	672,834	13,597,395	2,021%	427	91%
	2060	561,533	12,214,812	2,175%	362	92%
	2061	467,129	10,926,849	2,339%	306	93%
	2062	387,457	9,697,829	2,503%	257	94%
	2063	320,554	8,575,393	2,675%	216	94%
	2064	264,617	7,550,662	2,853%	180	95%
	2065	218,040	6,617,060	3,035%	150	95%
	2066	179,363	5,751,317	3,207%	125	96%
	2067	147,340	4,954,643	3,363%	104	96%
	2068	120,887	4,229,880	3,499%	86	96%
	2069	99,097	3,590,506	3,623%	71	97%
	2070	81,167	3,032,365	3,736%	59	97%
	2071	66,409	2,550,886	3,841%	48	97%
	2072	54,270	2,142,611	3,948%	40	97%
	2073	44,271	1,790,781	4,045%	33	97%
	2074	36,031	1,485,999	4,124%	27	97%
	2075	29,265	1,223,501	4,181%	22	97%
	2076	23,720	1,007,458	4,247%	18	97%

**With Interest Accum./Disc. To 12/31/2016 at Max. Val. Interest**

Future (2017+)	241,901,025	235,256,897	97%
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**Attachment 1-e-ii**  
**Massachusetts Mutual Life Insurance Company**  
**Nationwide Experience by Calendar Year**  
**Active Lives Currently Paying Premium Before Increase**  
**511 Rate Series**

	Calendar Year	Projected Experience using Current Assumptions				Cumulative Loss Ratio with interest
		A Earned Premium	B Incurred Claims	C = B / A Incurred Loss Ratio	D End of Year Lives	E Actual (Column C) with Max. Val. Interest
Projected Future Experience	2017	18,987,062	810,061	4%	6,475	4%
	2018	18,654,073	1,001,440	5%	6,372	5%
	2019	18,375,919	1,140,964	6%	6,285	5%
	2020	18,134,065	1,369,423	8%	6,209	6%
	2021	17,917,702	1,670,963	9%	6,141	6%
	2022	16,442,599	2,028,650	12%	6,074	7%
	2023	14,981,334	2,432,100	16%	6,005	8%
	2024	14,771,099	2,900,662	20%	5,934	9%
	2025	14,557,702	3,446,209	24%	5,858	10%
	2026	14,327,917	4,074,851	28%	5,778	12%
	2027	14,074,674	4,833,254	34%	5,693	13%
	2028	13,811,981	5,740,344	42%	5,601	15%
	2029	13,538,903	6,777,936	50%	5,502	17%
	2030	13,240,568	7,958,386	60%	5,396	18%
	2031	12,921,993	9,285,791	72%	5,281	21%
	2032	12,583,179	10,767,276	86%	5,158	23%
	2033	12,217,104	12,395,412	101%	5,026	26%
	2034	11,834,054	14,186,416	120%	4,885	29%
	2035	11,430,009	16,150,047	141%	4,735	32%
	2036	11,007,046	18,225,481	166%	4,576	35%
	2037	10,563,156	20,388,653	193%	4,407	38%
	2038	10,098,414	22,653,136	224%	4,229	42%
	2039	9,614,687	25,006,917	260%	4,043	46%
	2040	9,114,471	27,292,787	299%	3,848	50%
	2041	8,600,647	29,480,920	343%	3,648	55%
	2042	8,076,777	31,534,307	390%	3,441	59%
	2043	7,546,723	33,428,875	443%	3,231	64%
	2044	7,014,874	35,116,977	501%	3,018	68%
	2045	6,485,434	36,489,694	563%	2,805	73%
	2046	5,962,824	37,528,136	629%	2,593	77%
	2047	5,451,368	38,198,314	701%	2,384	81%
	2048	4,955,068	38,444,604	776%	2,179	86%
	2049	4,477,569	38,279,077	855%	1,981	90%
	2050	4,022,073	37,732,179	938%	1,790	94%
	2051	3,591,413	36,882,054	1,027%	1,608	97%
	2052	3,187,729	35,729,872	1,121%	1,437	101%
	2053	2,812,370	34,266,348	1,218%	1,276	104%
	2054	2,466,501	32,553,741	1,320%	1,127	107%
	2055	2,150,493	30,653,860	1,425%	989	109%
	2056	1,864,210	28,601,606	1,534%	864	112%
	2057	1,606,904	26,465,008	1,647%	751	114%
	2058	1,377,477	24,249,405	1,760%	648	116%
	2059	1,174,681	22,075,349	1,879%	557	118%
	2060	996,661	20,001,415	2,007%	477	119%
	2061	841,664	18,024,319	2,142%	406	120%
	2062	707,722	16,161,632	2,284%	345	121%
	2063	592,715	14,342,230	2,420%	291	122%
	2064	494,636	12,640,922	2,556%	245	123%
	2065	411,568	11,067,881	2,689%	206	124%
	2066	341,436	9,647,506	2,826%	173	124%
	2067	282,484	8,382,119	2,967%	144	125%
	2068	233,098	7,239,455	3,106%	120	125%
	2069	191,964	6,214,008	3,237%	100	126%
	2070	157,697	5,309,689	3,367%	83	126%
	2071	129,258	4,519,454	3,496%	68	126%
	2072	105,673	3,823,649	3,618%	56	126%
	2073	86,241	3,203,918	3,715%	46	126%
	2074	70,285	2,659,133	3,783%	38	127%
	2075	57,074	2,193,242	3,843%	31	127%
	2076	46,336	1,800,770	3,886%	26	127%

**With Interest Accum./Disc. To 12/31/2016 at Max. Val. Interest**

Future (2017+)	261,358,707	331,246,748	127%
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**Attachment 2-a**  
**Massachusetts Mutual Life Insurance Company**  
**Actual to Expected Experience by Calendar Year**  
**Nationwide Experience Before Requested Rate Increase**  
**200 Series**

	Calendar Year	Actual or Projected Experience using Current Assumptions				Expected Experience using Pricing Assumptions				Cumulative Loss Ratio With Interest		
		A	B	C = B / A	D	E	F	G = F / E	H	I Actual (Column C) with Current Interest	J Expected (Column G) with Pricing Interest	K = I / J
		Earned Premium	Incurred Claims	Incurred Loss Ratio	End of Year Lives	Earned Premium	Incurred Claims	Incurred Loss Ratio	End of Year Lives			
Historical Experience	2000	613,240	0	0%	1,775	612,509	11,055	2%	1,782	0%	2%	0.00
	2001	8,395,491	64,652	1%	7,642	8,446,186	140,176	2%	7,685	1%	2%	0.43
	2002	21,414,123	527,514	2%	15,522	21,344,078	451,023	2%	15,379	2%	2%	0.98
	2003	35,814,100	1,663,767	5%	20,532	35,335,644	1,086,220	3%	19,937	3%	3%	1.32
	2004	40,048,607	1,499,223	4%	21,435	38,588,625	2,031,880	5%	20,133	3%	3%	1.00
	2005	42,715,862	4,285,536	10%	22,602	40,210,297	3,341,032	8%	20,651	5%	5%	1.11
	2006	45,591,486	2,558,159	6%	23,103	41,927,349	4,930,438	12%	20,482	5%	6%	0.87
	2007	45,166,329	6,545,051	14%	22,751	40,458,283	6,497,844	16%	19,565	7%	8%	0.90
	2008	44,285,648	4,839,785	11%	22,423	38,638,041	7,882,091	20%	18,726	7%	9%	0.81
	2009	43,408,109	9,523,487	22%	21,976	37,026,862	8,971,576	24%	17,925	9%	11%	0.85
	2010	42,685,742	13,026,656	31%	21,727	35,445,537	10,011,391	28%	17,150	11%	12%	0.92
	2011	41,112,798	11,846,074	29%	21,494	33,067,353	11,052,159	33%	16,398	13%	13%	0.93
	2012	38,526,870	13,384,834	35%	21,256	29,920,078	12,101,686	40%	15,664	14%	15%	0.94
	2013	35,377,756	11,596,758	33%	21,023	26,376,612	13,233,811	50%	14,946	15%	16%	0.92
	2014	33,515,938	18,832,221	56%	20,770	24,076,937	14,458,698	60%	14,236	17%	18%	0.95
Projected Future Experience	2015	31,914,852	25,447,788	80%	20,490	22,098,246	15,765,425	71%	13,533	20%	19%	1.01
	2016	30,006,357	21,126,520	70%	20,259	19,751,213	17,174,620	87%	12,819	21%	21%	1.01
	2017	31,079,839	27,181,398	87%	19,907	18,267,088	18,587,243	102%	12,088	24%	23%	1.04
	2018	30,485,298	31,556,167	104%	19,534	17,055,798	19,953,056	117%	11,346	26%	24%	1.07
	2019	29,856,502	36,575,132	123%	19,139	15,850,085	21,256,310	134%	10,615	29%	26%	1.11
	2020	29,188,760	42,199,539	145%	18,723	14,671,612	22,545,005	154%	9,902	32%	28%	1.15
	2021	28,435,565	48,289,381	170%	18,284	13,481,382	23,818,916	177%	9,209	35%	29%	1.19
	2022	27,535,657	54,947,954	200%	17,824	12,223,193	25,046,989	205%	8,539	38%	31%	1.24
	2023	26,658,862	62,233,120	233%	17,342	11,047,813	26,213,484	237%	7,894	42%	33%	1.29
	2024	25,813,214	70,198,281	272%	16,837	10,008,344	27,286,104	273%	7,275	46%	34%	1.34
	2025	24,953,361	78,915,760	316%	16,309	9,047,366	28,253,396	312%	6,682	50%	36%	1.40
	2026	24,056,459	88,090,112	366%	15,759	8,136,115	29,115,211	358%	6,116	54%	37%	1.46
	2027	23,159,499	98,278,321	424%	15,183	7,301,723	29,847,681	409%	5,578	59%	39%	1.53
	2028	22,232,047	109,729,892	494%	14,580	6,523,512	30,402,493	466%	5,068	64%	40%	1.60
	2029	21,266,922	121,720,216	572%	13,952	5,798,623	30,761,960	531%	4,586	69%	41%	1.67
	2030	20,266,567	133,721,788	660%	13,299	5,127,063	30,925,560	603%	4,133	75%	43%	1.75
	2031	19,234,185	145,567,525	757%	12,624	4,508,422	30,895,323	685%	3,710	80%	44%	1.83
	2032	18,174,104	156,964,948	864%	11,930	3,941,945	30,667,187	778%	3,315	86%	45%	1.91
	2033	17,091,770	167,723,124	981%	11,221	3,426,521	30,237,472	882%	2,949	92%	46%	2.00
	2034	15,993,698	177,674,528	1,111%	10,502	2,960,675	29,611,688	1,000%	2,612	98%	47%	2.08
	2035	14,886,638	186,272,387	1,251%	9,777	2,542,521	28,799,433	1,133%	2,303	104%	48%	2.17
	2036	13,778,563	193,122,445	1,402%	9,052	2,169,813	27,818,990	1,282%	2,020	110%	49%	2.25
	2037	12,677,733	197,929,656	1,561%	8,332	1,840,009	26,696,077	1,451%	1,764	116%	49%	2.34
	2038	11,592,628	200,605,264	1,730%	7,623	1,550,349	25,436,330	1,641%	1,533	121%	50%	2.42
	2039	10,532,012	201,186,330	1,910%	6,930	1,297,908	24,054,257	1,853%	1,326	126%	51%	2.49
	2040	9,504,428	199,645,104	2,101%	6,261	1,079,594	22,587,088	2,092%	1,141	131%	51%	2.57
	2041	8,517,562	196,078,658	2,302%	5,618	892,244	21,062,066	2,361%	977	136%	52%	2.63
	2042	7,578,659	190,543,157	2,514%	5,007	732,707	19,505,638	2,662%	832	140%	52%	2.70
	2043	6,693,871	183,119,006	2,736%	4,432	597,909	17,936,456	3,000%	706	144%	52%	2.76
	2044	5,868,287	174,349,660	2,971%	3,896	484,883	16,384,530	3,379%	595	148%	53%	2.81
	2045	5,105,348	164,589,874	3,224%	3,400	390,822	14,860,355	3,802%	500	151%	53%	2.86
	2046	4,407,383	154,024,142	3,495%	2,946	313,129	13,384,013	4,274%	417	154%	53%	2.90
	2047	3,775,413	142,797,637	3,782%	2,534	249,433	11,977,283	4,802%	347	157%	53%	2.94
	2048	3,208,741	131,025,786	4,083%	2,165	197,584	10,653,256	5,392%	287	159%	53%	2.97
	2049	2,705,953	119,177,548	4,404%	1,836	155,660	9,418,030	6,050%	236	161%	54%	3.00
	2050	2,264,187	107,573,516	4,751%	1,546	121,986	8,275,057	6,784%	193	163%	54%	3.03
	2051	1,879,275	96,391,066	5,129%	1,292	95,119	7,226,178	7,597%	158	164%	54%	3.05
	2052-2056	5,288,760	333,589,787	6,308%	3,745	234,182	23,672,079	10,108%	434	168%	54%	3.12
	2057-2061	1,647,871	153,550,777	9,318%	1,261	60,969	10,229,124	16,778%	138	170%	54%	3.14
	2062-2066	430,362	58,645,482	13,627%	358	15,165	3,909,528	25,779%	39	170%	54%	3.15
	2067-2071	94,988	17,814,943	18,755%	84	3,679	1,275,394	34,665%	10	171%	54%	3.15
	2072-2076	16,813	3,926,838	23,356%	16	804	332,814	41,393%	2	171%	54%	3.15

With Interest Accum./Disc. To 12/31/2016		
History	863,276,387	184,536,274 21%
Future	344,670,444	1,875,704,191 544%
Lifetime	1,207,946,831	2,060,240,465 171%

With Interest Accum./Disc. To 12/31/2016		
853,540,254	179,887,604	21%
121,611,600	347,682,904	286%
975,151,854	527,570,507	54%

Expected experience uses the actual policies sold and projects from issue on a seriatim basis using the original pricing assumptions

**Attachment 2-b**  
**Massachusetts Mutual Life Insurance Company**  
**Actual to Expected Experience by Calendar Year**  
**Nationwide Experience Before Requested Rate Increase**  
**300 Series**

	Calendar Year	Actual or Projected Experience using Current Assumptions				Expected Experience using Pricing Assumptions				Cumulative Loss Ratio With Interest		
		A Earned Premium	B Incurred Claims	C = B / A Incurred Loss Ratio	D End of Year Lives	E Earned Premium	F Incurred Claims	G = F / E Incurred Loss Ratio	H End of Year Lives	I Actual (Column C) with Current Interest	J Expected (Column G) with Pricing Interest	K = I / J Actual-to-Expected Ratio
Historical Experience	2000	0	0	0%	0	0	0	0%	0	0%	0%	0.00
	2001	0	0	0%	0	0	0	0%	0	0%	0%	0.00
	2002	0	0	0%	0	0	0	0%	0	0%	0%	0.00
	2003	2,609,108	0	0%	4,039	2,614,385	27,078	1%	4,066	0%	1%	0.00
	2004	18,552,169	0	0%	12,639	18,534,486	212,854	1%	12,579	0%	1%	0.00
	2005	43,805,416	1,631,525	4%	19,979	43,180,270	672,377	2%	19,487	2%	1%	1.75
	2006	47,326,080	1,409,083	3%	19,541	44,880,890	1,394,521	3%	18,300	3%	2%	1.29
	2007	46,183,217	2,767,654	6%	19,201	42,393,416	2,454,114	6%	17,382	4%	3%	1.18
	2008	45,396,815	3,535,941	8%	18,888	40,595,401	3,738,011	9%	16,624	4%	4%	1.06
	2009	44,522,865	1,917,447	4%	18,526	39,033,465	5,172,144	13%	15,965	4%	6%	0.80
	2010	43,757,076	4,370,801	10%	18,277	37,587,927	6,398,931	17%	15,344	5%	7%	0.75
	2011	43,053,633	4,510,605	10%	18,100	36,190,836	7,163,899	20%	14,734	6%	8%	0.70
	2012	42,564,654	7,251,401	17%	17,942	34,831,524	7,879,471	23%	14,134	7%	9%	0.73
	2013	41,726,228	9,285,554	22%	17,796	33,107,691	8,654,242	26%	13,550	8%	10%	0.77
	2014	37,587,892	8,221,395	22%	17,640	28,639,776	9,503,976	33%	12,995	9%	12%	0.77
Projected Future Experience	2015	28,863,830	8,017,183	28%	17,462	20,525,199	10,491,628	51%	12,468	10%	13%	0.75
	2016	26,416,234	10,007,611	38%	17,295	17,896,209	11,583,329	65%	11,944	11%	14%	0.75
	2017	27,058,241	14,339,615	53%	17,067	16,981,380	12,779,070	75%	11,423	12%	16%	0.78
	2018	26,670,628	17,475,098	66%	16,826	16,072,076	14,092,253	88%	10,899	14%	17%	0.81
	2019	26,261,727	21,052,155	80%	16,573	15,149,887	15,523,094	102%	10,357	16%	19%	0.84
	2020	25,830,669	24,909,853	96%	16,306	14,199,147	17,008,567	120%	9,792	18%	20%	0.88
	2021	25,375,075	29,107,559	115%	16,024	13,242,261	18,443,991	139%	9,233	20%	22%	0.93
	2022	24,893,451	33,839,929	136%	15,726	12,309,927	19,900,284	162%	8,686	23%	24%	0.97
	2023	24,367,703	39,166,919	161%	15,411	11,392,988	21,402,839	188%	8,152	26%	25%	1.01
	2024	23,761,596	45,169,969	190%	15,081	10,445,980	22,921,873	219%	7,630	29%	27%	1.06
	2025	23,000,752	51,942,324	226%	14,733	9,409,280	24,434,242	260%	7,123	32%	29%	1.11
	2026	22,375,916	59,558,175	266%	14,367	8,570,162	25,918,802	302%	6,629	36%	31%	1.17
	2027	21,762,269	68,614,707	315%	13,981	7,806,386	27,339,264	350%	6,150	40%	32%	1.23
	2028	21,115,770	79,051,951	374%	13,571	7,078,380	28,642,452	405%	5,687	44%	34%	1.29
	2029	20,432,131	90,489,423	443%	13,137	6,387,590	29,804,821	467%	5,240	49%	36%	1.36
	2030	19,710,379	103,050,604	523%	12,679	5,735,299	30,814,490	537%	4,812	54%	37%	1.43
	2031	18,950,075	116,555,121	615%	12,195	5,122,527	31,648,171	618%	4,401	59%	39%	1.51
	2032	18,151,864	130,334,602	718%	11,688	4,550,075	32,295,654	710%	4,009	65%	41%	1.59
	2033	17,317,170	144,332,003	833%	11,158	4,018,463	32,742,443	815%	3,638	71%	42%	1.68
	2034	16,448,420	158,218,292	962%	10,607	3,527,919	32,964,400	934%	3,287	77%	43%	1.77
	2035	15,549,472	171,583,777	1,103%	10,037	3,078,346	32,949,701	1,070%	2,957	83%	45%	1.86
	2036	14,625,031	184,075,652	1,259%	9,452	2,669,248	32,697,259	1,225%	2,648	90%	46%	1.95
	2037	13,680,944	195,309,218	1,428%	8,856	2,299,709	32,209,035	1,401%	2,361	97%	47%	2.04
	2038	12,723,950	205,029,003	1,611%	8,253	1,968,445	31,481,894	1,599%	2,095	103%	48%	2.13
	2039	11,762,193	212,609,287	1,808%	7,648	1,673,826	30,535,874	1,824%	1,851	110%	49%	2.22
	2040	10,803,777	217,536,506	2,014%	7,046	1,413,877	29,398,418	2,079%	1,627	116%	50%	2.31
	2041	9,857,667	219,836,025	2,230%	6,452	1,186,334	28,105,847	2,369%	1,424	122%	51%	2.39
	2042	8,932,050	219,942,729	2,462%	5,871	988,750	26,689,644	2,699%	1,240	128%	52%	2.47
	2043	8,035,496	218,034,252	2,713%	5,309	818,565	25,175,880	3,076%	1,074	133%	53%	2.54
	2044	7,175,602	213,913,797	2,981%	4,769	673,164	23,589,796	3,504%	926	139%	53%	2.61
	2045	6,359,647	207,505,652	3,263%	4,256	549,936	21,944,420	3,990%	795	143%	54%	2.67
	2046	5,593,552	199,268,559	3,562%	3,772	446,338	20,274,083	4,542%	679	148%	54%	2.73
	2047	4,881,945	189,881,517	3,889%	3,322	359,938	18,597,501	5,167%	576	152%	54%	2.79
	2048	4,227,740	179,549,149	4,247%	2,905	288,434	16,951,789	5,877%	487	155%	55%	2.83
	2049	3,632,817	168,271,078	4,632%	2,524	229,697	15,349,111	6,682%	410	158%	55%	2.88
	2050	3,097,181	155,937,816	5,035%	2,178	181,802	13,808,452	7,595%	343	161%	55%	2.92
	2051	2,620,514	143,205,266	5,465%	1,867	143,037	12,347,166	8,632%	285	164%	56%	2.95
	2052-2056	7,782,754	535,253,134	6,877%	5,794	357,673	42,892,322	11,992%	827	172%	56%	3.06
	2057-2061	2,661,776	281,967,314	10,593%	2,232	92,873	20,097,065	21,639%	288	175%	56%	3.11
	2062-2066	753,488	124,292,585	16,496%	734	21,298	7,790,511	36,578%	90	176%	56%	3.13
	2067-2071	176,218	44,270,279	25,123%	206	4,351	2,541,305	58,410%	27	177%	56%	3.13
	2072-2076	32,683	12,298,724	37,630%	50	797	810,932	101,710%	8	177%	56%	3.14

	With Interest Accum./Disc. To 12/31/2016		
History	720,776,170	77,844,683	11%
Future	325,019,637	1,771,703,843	545%
Lifetime	1,045,795,806	1,849,548,526	177%

	With Interest Accum./Disc. To 12/31/2016		
	676,651,304	97,234,841	14%
	125,847,758	355,446,425	282%
	802,499,062	452,681,266	56%

Expected experience uses the actual policies sold and projects from issue on a seriatim basis using the original pricing assumptions

**Attachment 2-c**  
**Massachusetts Mutual Life Insurance Company**  
**Actual to Expected Experience by Calendar Year**  
**Nationwide Experience Before Requested Rate Increase**  
**400 Series**

	Calendar Year	Actual or Projected Experience using Current Assumptions				Expected Experience using Pricing Assumptions				Cumulative Loss Ratio With Interest		
		A	B	C = B / A	D	E	F	G = F / E	H	I Actual (Column C) with Current Interest	J Expected (Column G) with Pricing Interest	K = I / J
		Earned Premium	Incurred Claims	Incurred Loss Ratio	End of Year Lives	Earned Premium	Incurred Claims	Incurred Loss Ratio	End of Year Lives			
Historical Experience	2000	0	0	0%	0	0	0	0%	0	0%	0%	0.00
	2001	0	0	0%	0	0	0	0%	0	0%	0%	0.00
	2002	0	0	0%	0	0	0	0%	0	0%	0%	0.00
	2003	0	0	0%	0	0	0	0%	0	0%	0%	0.00
	2004	0	0	0%	0	0	0	0%	0	0%	0%	0.00
	2005	2,065,946	0	0%	2,507	2,067,518	13,324	1%	2,516	0%	1%	0.00
	2006	15,349,065	157,281	1%	7,438	15,405,617	111,792	1%	7,448	1%	1%	1.25
	2007	30,545,733	288,682	1%	12,453	30,330,815	327,299	1%	12,365	1%	1%	0.98
	2008	46,382,644	1,088,274	2%	16,160	45,626,822	754,710	2%	15,968	2%	1%	1.25
	2009	49,536,473	2,951,319	6%	15,994	48,574,356	1,390,732	3%	15,704	3%	2%	1.69
	2010	48,101,268	1,008,028	2%	15,579	46,964,474	2,252,216	5%	15,148	3%	2%	1.13
	2011	46,889,846	1,877,363	4%	15,313	45,390,160	3,272,858	7%	14,682	3%	3%	0.91
	2012	46,008,435	2,522,573	5%	15,100	44,071,465	4,250,026	10%	14,261	3%	4%	0.80
	2013	45,426,076	3,072,784	7%	14,954	42,857,509	5,096,639	12%	13,862	4%	5%	0.74
	2014	44,919,635	3,058,973	7%	14,802	41,712,387	5,761,929	14%	13,470	4%	6%	0.69
	2015	43,976,405	3,967,019	9%	14,665	40,200,797	6,403,325	16%	13,083	4%	7%	0.67
	2016	40,359,667	4,567,532	11%	14,522	36,174,168	7,111,289	20%	12,701	5%	8%	0.66
Projected Future Experience	2017	36,786,453	7,594,087	21%	14,357	31,236,473	7,902,189	25%	12,323	6%	8%	0.69
	2018	31,914,002	9,140,525	29%	14,186	26,238,281	8,798,645	34%	11,948	7%	9%	0.73
	2019	29,790,351	11,065,861	37%	14,007	23,762,383	9,801,907	41%	11,569	8%	10%	0.77
	2020	29,246,173	13,316,320	46%	13,819	22,731,387	10,914,042	48%	11,186	9%	12%	0.81
	2021	28,874,405	15,845,940	55%	13,621	21,862,699	12,142,258	56%	10,799	11%	13%	0.85
	2022	28,482,699	18,648,405	65%	13,411	20,987,659	13,483,034	64%	10,408	12%	14%	0.89
	2023	28,069,084	21,813,469	78%	13,190	20,106,589	14,934,797	74%	10,012	14%	15%	0.93
	2024	27,631,236	25,389,510	92%	12,955	19,220,034	16,494,570	86%	9,613	16%	16%	0.97
	2025	27,157,562	29,448,378	108%	12,707	18,317,708	18,161,199	99%	9,210	18%	18%	1.01
	2026	26,594,130	34,004,722	128%	12,445	17,326,359	19,932,833	115%	8,804	20%	19%	1.05
	2027	25,972,274	39,356,028	152%	12,167	16,315,021	21,790,478	134%	8,395	23%	21%	1.10
	2028	25,286,896	45,683,088	181%	11,872	15,264,012	23,685,903	155%	7,984	25%	22%	1.14
	2029	24,612,235	52,806,190	215%	11,558	14,284,652	25,602,187	179%	7,571	28%	24%	1.19
	2030	23,982,403	60,680,747	253%	11,224	13,399,452	27,521,281	205%	7,158	31%	25%	1.24
	2031	23,309,736	69,292,292	297%	10,871	12,521,740	29,413,116	235%	6,745	35%	27%	1.29
	2032	22,591,478	78,632,278	348%	10,497	11,654,318	31,236,795	268%	6,333	38%	29%	1.34
	2033	21,826,341	88,631,541	406%	10,103	10,800,575	32,951,669	305%	5,925	42%	30%	1.40
	2034	21,013,757	99,159,623	472%	9,689	9,963,983	34,525,604	347%	5,522	46%	32%	1.45
	2035	20,154,359	109,795,567	545%	9,256	9,148,128	35,922,348	393%	5,125	51%	34%	1.51
	2036	19,249,886	120,367,595	625%	8,806	8,356,693	37,103,422	444%	4,736	55%	35%	1.57
	2037	18,303,315	130,820,550	715%	8,340	7,593,360	38,033,202	501%	4,357	60%	37%	1.63
	2038	17,318,963	140,823,609	813%	7,861	6,861,746	38,676,269	564%	3,990	65%	38%	1.69
	2039	16,302,937	150,113,335	921%	7,373	6,165,231	39,016,759	633%	3,635	69%	40%	1.75
	2040	15,262,669	158,180,282	1,036%	6,878	5,506,740	39,056,178	709%	3,295	74%	41%	1.80
	2041	14,205,898	164,789,848	1,160%	6,380	4,888,670	38,799,089	794%	2,972	79%	43%	1.86
	2042	13,141,798	169,593,302	1,290%	5,884	4,312,896	38,239,482	887%	2,666	84%	44%	1.91
	2043	12,079,937	172,376,763	1,427%	5,394	3,780,717	37,386,191	989%	2,378	88%	45%	1.96
	2044	11,030,374	173,250,516	1,571%	4,913	3,292,762	36,257,154	1,101%	2,110	93%	46%	2.01
	2045	10,002,867	172,333,051	1,723%	4,446	2,849,006	34,867,743	1,224%	1,861	97%	47%	2.05
	2046	9,006,900	169,615,034	1,883%	3,997	2,448,832	33,238,339	1,357%	1,632	101%	48%	2.10
	2047	8,051,387	165,098,725	2,051%	3,569	2,091,026	31,404,838	1,502%	1,423	104%	49%	2.13
	2048	7,144,438	158,824,154	2,223%	3,165	1,773,839	29,413,772	1,658%	1,234	108%	50%	2.17
	2049	6,291,800	151,197,459	2,403%	2,788	1,495,059	27,322,896	1,828%	1,064	110%	50%	2.20
	2050	5,498,717	142,590,328	2,593%	2,438	1,252,086	25,182,380	2,011%	912	113%	51%	2.23
	2051	4,768,505	133,238,593	2,794%	2,117	1,042,059	23,031,737	2,210%	778	116%	51%	2.25
	2052-2056	15,153,479	514,067,621	3,392%	6,779	3,001,579	84,777,019	2,824%	2,401	124%	53%	2.33
	2057-2061	5,896,998	286,437,818	4,857%	2,761	1,020,586	44,254,611	4,336%	945	127%	54%	2.37
	2062-2066	1,878,871	132,780,493	7,067%	966	304,362	19,806,678	6,508%	338	129%	54%	2.39
	2067-2071	506,539	51,972,711	10,260%	294	80,487	7,621,709	9,469%	112	129%	54%	2.39
	2072-2076	113,673	16,761,913	14,746%	79	19,403	2,491,767	12,842%	35	129%	54%	2.39

With Interest Accum./Disc. To 12/31/2016				With Interest Accum./Disc. To 12/31/2016			
History	597,424,543	29,655,051	5%	573,692,359	43,276,042	8%	
Future	400,073,960	1,257,656,009	314%	257,644,695	405,306,688	157%	
Lifetime	997,498,502	1,287,311,060	129%	831,337,054	448,582,730	54%	

Expected experience uses the actual policies sold and projects from issue on a seriatim basis using the original pricing assumptions

**Attachment 2-d**  
**Massachusetts Mutual Life Insurance Company**  
**Actual to Expected Experience by Calendar Year**  
**Nationwide Experience Before Requested Rate Increase**  
**500 Series**

	Calendar Year	Actual or Projected Experience using Current Assumptions				Expected Experience using Pricing Assumptions				Cumulative Loss Ratio With Interest		
		A Earned Premium	B Incurred Claims	C = B / A Incurred Loss Ratio	D End of Year Lives	E Earned Premium	F Incurred Claims	G = F / E Incurred Loss Ratio	H End of Year Lives	I Actual (Column C) with Current Interest	J Expected (Column G) with Pricing Interest	K = I / J Actual-to-Expected Ratio
Historical Experience	2000	0	0	0%	0	0	0	0%	0	0%	0%	0.00
	2001	0	0	0%	0	0	0	0%	0	0%	0%	0.00
	2002	0	0	0%	0	0	0	0%	0	0%	0%	0.00
	2003	0	0	0%	0	0	0	0%	0	0%	0%	0.00
	2004	0	0	0%	0	0	0	0%	0	0%	0%	0.00
	2005	0	0	0%	0	0	0	0%	0	0%	0%	0.00
	2006	0	0	0%	0	0	0	0%	0	0%	0%	0.00
	2007	0	0	0%	0	0	0	0%	0	0%	0%	0.00
	2008	1,163,529	0	0%	1,363	1,165,582	4,612	0%	1,368	0%	0%	0.00
	2009	9,316,198	4,222	0%	4,779	9,408,861	42,814	0%	4,851	0%	0%	0.09
	2010	22,500,064	126,897	1%	9,165	22,874,695	150,742	1%	9,335	0%	1%	0.66
	2011	38,988,447	408,573	1%	15,395	39,741,688	355,098	1%	15,656	1%	1%	0.98
	2012	60,962,602	570,105	1%	19,293	62,118,523	666,092	1%	19,586	1%	1%	0.92
	2013	61,955,893	2,246,174	4%	19,152	63,123,599	1,023,654	2%	19,401	2%	1%	1.50
	2014	60,808,721	4,048,268	7%	18,834	62,004,270	1,443,925	2%	19,042	3%	1%	2.01
Projected Future Experience	2015	59,796,780	3,043,003	5%	18,589	61,050,228	1,942,099	3%	18,761	3%	2%	1.87
	2016	58,889,813	2,323,797	4%	18,339	60,249,964	2,544,475	4%	18,528	3%	2%	1.60
	2017	58,310,117	4,575,671	8%	18,084	59,536,428	3,328,466	6%	18,317	4%	2%	1.55
	2018	57,304,229	5,398,096	9%	17,858	58,633,025	4,100,934	7%	18,115	4%	3%	1.50
	2019	54,889,236	6,506,352	12%	17,649	56,146,179	4,916,495	9%	17,916	5%	3%	1.47
	2020	51,564,517	7,790,056	15%	17,446	52,663,506	5,853,870	11%	17,714	6%	4%	1.44
	2021	47,124,626	9,283,422	20%	17,239	47,995,731	6,792,328	14%	17,502	7%	5%	1.44
	2022	40,073,719	10,963,798	27%	17,022	40,667,418	7,844,239	19%	17,271	8%	5%	1.43
	2023	38,637,226	12,931,044	33%	16,793	39,036,557	9,126,777	23%	17,018	9%	6%	1.43
	2024	37,877,490	15,217,400	40%	16,551	38,070,069	10,625,932	28%	16,744	10%	7%	1.44
	2025	37,071,270	17,853,308	48%	16,293	37,035,458	12,386,240	33%	16,452	11%	8%	1.44
	2026	36,251,578	20,869,771	58%	16,019	35,984,990	14,445,766	40%	16,140	12%	9%	1.44
	2027	35,383,068	24,488,463	69%	15,725	34,862,766	16,834,760	48%	15,806	14%	10%	1.45
	2028	34,504,504	28,785,043	83%	15,411	33,723,092	19,607,224	58%	15,448	16%	11%	1.45
	2029	33,591,473	33,697,423	100%	15,073	32,547,835	22,601,189	69%	15,065	18%	12%	1.46
	2030	32,611,329	39,238,660	120%	14,712	31,294,825	25,872,928	83%	14,656	20%	14%	1.47
	2031	31,578,635	45,447,233	144%	14,327	29,998,511	29,377,167	98%	14,219	22%	15%	1.48
	2032	30,485,021	52,342,826	172%	13,916	28,641,092	33,039,076	115%	13,753	25%	17%	1.49
	2033	29,387,895	59,947,301	204%	13,480	27,279,308	36,829,781	135%	13,258	28%	19%	1.50
	2034	28,236,749	68,263,376	242%	13,017	25,867,221	40,558,089	157%	12,735	31%	20%	1.52
	2035	27,030,953	77,141,459	285%	12,527	24,418,896	44,372,621	182%	12,184	35%	22%	1.54
	2036	25,765,983	86,443,244	335%	12,012	22,936,862	48,102,887	210%	11,609	38%	24%	1.57
	2037	24,478,979	96,092,631	393%	11,472	21,459,542	51,594,916	240%	11,009	42%	26%	1.59
	2038	23,154,232	105,883,808	457%	10,910	19,970,405	54,819,456	275%	10,391	46%	29%	1.62
	2039	21,791,416	115,379,698	529%	10,328	18,477,692	57,700,508	312%	9,757	50%	31%	1.64
	2040	20,407,908	124,381,703	609%	9,730	16,999,944	60,147,188	354%	9,112	55%	33%	1.67
	2041	19,004,924	132,660,442	698%	9,119	15,540,519	61,930,555	399%	8,462	59%	35%	1.70
	2042	17,597,485	139,956,972	795%	8,501	14,116,392	62,990,344	446%	7,813	64%	37%	1.73
	2043	16,200,783	146,054,424	902%	7,882	12,744,676	63,418,343	498%	7,171	69%	39%	1.76
	2044	14,823,713	150,632,766	1,016%	7,265	11,431,038	63,159,885	553%	6,541	73%	41%	1.79
	2045	13,477,672	153,584,782	1,140%	6,656	10,184,205	62,269,988	611%	5,930	78%	43%	1.82
	2046	12,174,585	154,730,765	1,271%	6,062	9,011,543	60,771,613	674%	5,341	82%	44%	1.84
	2047	10,925,026	153,964,715	1,409%	5,487	7,921,359	58,740,562	742%	4,780	86%	46%	1.87
	2048	9,738,358	151,349,859	1,554%	4,935	6,917,868	56,262,941	813%	4,252	90%	47%	1.90
	2049	8,622,455	147,272,643	1,708%	4,411	6,001,832	53,363,898	889%	3,759	94%	49%	1.92
	2050	7,583,225	141,841,433	1,870%	3,918	5,173,537	50,168,839	970%	3,303	97%	50%	1.94
	2051	6,624,901	135,269,087	2,042%	3,458	4,431,758	46,732,196	1,054%	2,885	100%	51%	1.96
	2052-2056	21,645,800	551,623,176	2,548%	11,645	13,802,092	180,122,589	1,305%	9,485	112%	55%	2.03
	2057-2061	9,320,653	340,203,239	3,650%	5,322	5,533,557	103,232,298	1,866%	4,204	117%	57%	2.07
	2062-2066	3,646,062	182,057,244	4,993%	2,199	2,059,172	52,355,287	2,543%	1,708	120%	57%	2.09
	2067-2071	1,365,542	88,984,591	6,516%	850	737,922	23,762,609	3,220%	654	121%	58%	2.10
	2072-2076	485,917	39,124,510	8,052%	309	244,112	9,511,176	3,896%	233	121%	58%	2.10

With Interest Accum./Disc. To 12/31/2016			
History	425,866,631	13,995,709	3%
Future	652,956,948	1,296,618,850	199%
Lifetime	1,078,823,579	1,310,614,559	121%

With Interest Accum./Disc. To 12/31/2016			
434,185,178	8,915,262	2%	
630,397,662	606,551,787	96%	
1,064,582,840	615,467,049	58%	

Expected experience uses the actual policies sold and projects from issue on a seriatim basis using the original pricing assumptions

**Attachment 2-e**  
**Massachusetts Mutual Life Insurance Company**  
**Actual to Expected Experience by Calendar Year**  
**Nationwide Experience Before Requested Rate Increase**  
**511 Series**

	Calendar Year	Actual or Projected Experience using Current Assumptions				Expected Experience using Pricing Assumptions				Cumulative Loss Ratio With Interest		
		A Earned Premium	B Incurred Claims	C = B / A Incurred Loss Ratio	D End of Year Lives	E Earned Premium	F Incurred Claims	G = F / E Incurred Loss Ratio	H End of Year Lives	I Actual (Column C) with Current Interest	J Expected (Column G) with Pricing Interest	K = I / J Actual-to-Expected Ratio
Historical Experience	2000	0	0	0%	0	0	0	0%	0	0%	0%	0.00
	2001	0	0	0%	0	0	0	0%	0	0%	0%	0.00
	2002	0	0	0%	0	0	0	0%	0	0%	0%	0.00
	2003	0	0	0%	0	0	0	0%	0	0%	0%	0.00
	2004	0	0	0%	0	0	0	0%	0	0%	0%	0.00
	2005	0	0	0%	0	0	0	0%	0	0%	0%	0.00
	2006	0	0	0%	0	0	0	0%	0	0%	0%	0.00
	2007	0	0	0%	0	0	0	0%	0	0%	0%	0.00
	2008	0	0	0%	0	0	0	0%	0	0%	0%	0.00
	2009	0	0	0%	0	0	0	0%	0	0%	0%	0.00
	2010	0	0	0%	0	0	0	0%	0	0%	0%	0.00
	2011	757	0	0%	7	756	25	3%	7	0%	3%	0.00
	2012	5,280,048	0	0%	3,762	5,291,988	128,160	2%	3,786	0%	2%	0.00
	2013	16,765,476	0	0%	6,530	16,915,709	497,342	3%	6,569	0%	3%	0.00
	2014	19,377,333	271,980	1%	6,542	19,529,297	678,407	3%	6,554	1%	3%	0.21
	2015	19,267,598	136,193	1%	6,601	19,374,452	801,684	4%	6,592	1%	3%	0.19
	2016	19,245,910	549,479	3%	6,605	19,395,521	968,473	5%	6,593	1%	4%	0.31
Projected Future Experience	2017	19,007,043	812,003	4%	6,482	19,151,030	1,170,784	6%	6,475	2%	4%	0.41
	2018	18,673,729	1,003,772	5%	6,379	18,824,087	1,387,330	7%	6,372	2%	5%	0.48
	2019	18,395,271	1,143,830	6%	6,292	18,517,534	1,538,962	8%	6,273	3%	5%	0.53
	2020	18,153,123	1,372,962	8%	6,216	18,219,227	1,753,210	10%	6,176	3%	6%	0.58
	2021	17,936,468	1,675,276	9%	6,147	17,930,149	2,043,886	11%	6,084	4%	6%	0.62
	2022	16,461,055	2,033,893	12%	6,081	16,294,161	2,356,824	14%	5,995	4%	7%	0.66
	2023	14,999,450	2,438,375	16%	6,012	14,680,879	2,680,107	18%	5,907	5%	7%	0.69
	2024	14,788,848	2,907,927	20%	5,940	14,386,676	3,077,507	21%	5,819	6%	8%	0.73
	2025	14,575,045	3,454,602	24%	5,865	14,083,577	3,589,877	25%	5,726	7%	9%	0.76
	2026	14,344,803	4,084,277	28%	5,785	13,760,709	4,125,037	30%	5,627	8%	10%	0.79
	2027	14,091,063	4,843,952	34%	5,699	13,417,534	4,690,220	35%	5,523	9%	11%	0.82
	2028	13,827,822	5,752,471	42%	5,607	13,059,626	5,370,068	41%	5,413	10%	12%	0.85
	2029	13,554,138	6,791,209	50%	5,508	12,693,883	6,140,926	48%	5,295	11%	13%	0.88
	2030	13,255,151	7,972,540	60%	5,402	12,307,266	7,011,894	57%	5,170	13%	14%	0.91
	2031	12,935,891	9,301,179	72%	5,287	11,901,084	7,984,753	67%	5,038	14%	15%	0.93
	2032	12,596,359	10,783,570	86%	5,163	11,473,568	9,028,411	79%	4,897	16%	17%	0.96
	2033	12,229,552	12,412,555	101%	5,031	11,023,858	10,136,816	92%	4,749	18%	18%	0.99
	2034	11,845,768	14,203,622	120%	4,890	10,559,910	11,325,686	107%	4,592	20%	20%	1.01
	2035	11,441,002	16,167,384	141%	4,740	10,080,177	12,592,391	125%	4,426	23%	22%	1.04
	2036	11,017,328	18,242,859	166%	4,580	9,588,418	13,907,585	145%	4,253	25%	24%	1.06
	2037	10,572,739	20,406,266	193%	4,411	9,083,105	15,241,377	168%	4,072	28%	26%	1.09
	2038	10,107,324	22,671,351	224%	4,233	8,565,477	16,554,706	193%	3,884	31%	28%	1.11
	2039	9,622,954	25,025,668	260%	4,047	8,039,062	17,874,670	222%	3,689	34%	30%	1.13
	2040	9,122,139	27,312,304	299%	3,852	7,507,877	19,166,904	255%	3,488	37%	32%	1.15
	2041	8,607,750	29,501,242	343%	3,651	6,975,812	20,412,996	293%	3,284	40%	34%	1.17
	2042	8,083,348	31,555,434	390%	3,445	6,446,598	21,550,852	334%	3,077	44%	37%	1.19
	2043	7,552,785	33,450,764	443%	3,234	5,924,540	22,520,267	380%	2,868	47%	39%	1.21
	2044	7,020,451	35,139,539	501%	3,021	5,414,212	23,322,510	431%	2,659	51%	41%	1.23
	2045	6,490,546	36,512,539	563%	2,808	4,919,474	23,978,971	487%	2,453	54%	44%	1.24
	2046	5,967,484	37,551,026	629%	2,596	4,443,909	24,440,191	550%	2,250	57%	46%	1.26
	2047	5,455,588	38,220,920	701%	2,386	3,990,536	24,640,177	617%	2,052	61%	48%	1.27
	2048	4,958,859	38,466,530	776%	2,181	3,561,903	24,636,255	692%	1,861	64%	50%	1.28
	2049	4,480,942	38,299,701	855%	1,982	3,160,324	24,439,618	773%	1,678	67%	52%	1.29
	2050	4,025,042	37,751,421	938%	1,792	2,787,518	24,052,623	863%	1,504	70%	54%	1.30
	2051	3,593,991	36,899,478	1,027%	1,610	2,444,039	23,457,158	960%	1,341	73%	56%	1.31
	2052-2056	12,489,146	161,862,752	1,296%	5,697	8,091,718	102,203,591	1,263%	4,640	84%	63%	1.34
	2057-2061	5,999,738	110,834,949	1,847%	2,841	3,604,302	68,983,420	1,914%	2,226	91%	67%	1.36
	2062-2066	2,548,466	63,863,872	2,506%	1,260	1,481,028	38,761,976	2,617%	963	94%	68%	1.37
	2067-2071	994,521	31,664,966	3,184%	514	591,349	18,827,552	3,184%	392	95%	69%	1.38
	2072-2076	365,609	13,680,713	3,742%	198	231,660	8,241,359	3,558%	155	95%	69%	1.38

With Interest Accum./Disc. To 12/31/2016				With Interest Accum./Disc. To 12/31/2016			
History	86,699,660	1,003,231	1%	87,588,415	3,309,664	4%	
Future	261,627,513	331,501,539	127%	238,135,412	222,473,789	93%	
Lifetime	348,327,173	332,504,770	95%	325,723,827	225,783,453	69%	

Expected experience uses the actual policies sold and projects from issue on a seriatim basis using the original pricing assumptions



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June 16, 2020

Bobby Toone  
Virginia Bureau of Insurance (Department)

*Via SERFF*

**Re:      Massachusetts Mutual Life Insurance Company (MassMutual)**  
**Company NAIC # 65935**  
**SERFF Tracking # MILL-131569310**

<b>200 Series</b>	
Tax-Qualified Long-Term Care Policy Form	<b>MM-200-P-VA et al.</b>
<b>300 Series</b>	
Tax-Qualified Long-Term Care Policy Form	<b>MM-300-P-VA et al.</b>
<b>400 Series</b>	
Tax-Qualified Long-Term Care Policy Form	<b>MM-400-P-VA et al.</b>
<b>500 Series</b>	
Tax-Qualified Comprehensive Long-Term Care Policy Form	<b>MM500-P-VA et al.</b>
Tax-Qualified Facility Only Long-Term Care Policy Form	<b>MM501-P-VA et al.</b>
<b>511 Series</b>	
Tax-Qualified Comprehensive Long-Term Care Policy Form	<b>MM500-P-1-VA et al.</b>
Tax-Qualified Facility Only Long-Term Care Policy Form	<b>MM501-P-1-VA et al.</b>

Dear Bobby:

Thank you for reviewing this filing. This letter is being submitted as part of an amendment to the above-referenced filing to revise the rate increase request from that originally submitted on August 30, 2018. The company is requesting actuarial equivalence in jurisdictions where there is a delay in the implementation of the requested rate increase. In jurisdictions that did not approve the full amount as part of the initial request, the company began to submit follow-up rate increase filings earlier this year. In jurisdictions where the initial request is still pending, like Virginia, the company is revising the requested rate increase to reflect actuarial equivalence due to the delay.

The company proposes an increase that is actuarially equivalent to the original request with a higher cumulative maximum increase of 130%. This proposed rate increase produces a lifetime loss ratio that is actuarially equivalent to the original request of a maximum increase of 100%, but was determined by reflecting an updated implementation date of January 2021. As such, the increase level is higher than that previously noted in the August 2018 actuarial memorandum, which would have assumed an increase with an implementation date of January 2019.

This revised rate increase request will continue to meet the necessary loss ratio requirements in Virginia, as outlined in the actuarial memorandum and the supplement to the actuarial memorandum. Because the increase was determined to be actuarially equivalent to the original request, the actuarial memorandum, along with the attachments and exhibits, have not been updated for the revised rate increase request. Additionally, the revised rate level is still well below the rate increase level justified by the Texas and Minnesota Methods, as described in the May 27, 2020 response letter.

Offices in Principal Cities Worldwide

This work product was prepared solely to provide assistance to MassMutual. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends recipient be aided by its own actuary or other qualified professional when reviewing the Milliman work product.

Similar to that shown in the cover letter, the following table provides the distribution, range, and average requested rate increase in Virginia by rate series under the proposed 130% maximum request.

**Virginia Revised Rate Increase Request Distribution, Range, and Average Increase by Series<sup>[1]</sup>**

Rate Increase	All Series	200	300	400	500	511
0-10%	<1%	0%	0%	0%	1%	<1%
11-20%	1	0	<1	0	2	14
21-30%	4	1	<1	1	7	35
31-40%	6	1	1	2	12	33
41-50%	4	1	1	4	11	11
51-60%	4	2	1	3	10	6
61-70%	3	3	1	3	7	0
71-80%	3	3	2	4	6	0
81-90%	3	2	3	6	5	0
91-100%	4	3	3	4	6	0
101-110%	4	4	2	5	6	0
111-120%	4	3	3	4	7	0
121-130%	59	77	84	64	20	0
Minimum	0	23	17	22	0	10
Maximum	130	130	130	130	130	52
Average	98	118	122	112	77	33

[1] As of December 31, 2016 and excludes policies assumed to be paid-up prior to rate increase implementation.

Enclosed with this letter are revised proposed rate tables. These rate tables reflect rate increases to bring the rates to a level consistent with that on the 513 Series new business rates. The rate increases will be implemented on a seriatim basis such that no Virginia insured will receive more than a 130% rate increase or rate decrease. The actual rates implemented may vary from those in the enclosed rate tables due to the seriatim caps and implementation rounding algorithms.

Through a SERFF post-submission update, we revised the Rate/Rule Schedule tab to reflect the revised increase. We respectfully request that the Department acknowledge the post-submission update prior to issuing the disposition in order for the disposition to capture this change.

### Limitations and Qualifications

Milliman's work has been prepared for the use and benefit of MassMutual. Milliman's work may not be provided to third parties without Milliman's prior written consent. Milliman does not intend to benefit any third party recipient of its work product, even if Milliman consents to the release of its work product to such third party.

Milliman's work is being delivered to the Department, in accordance with its statutory and regulatory requirements. Milliman recognizes that materials it delivers to the Department may be public records subject to disclosure to third parties, however, Milliman does not intend to benefit and assumes no duty or liability to any third parties, including the Department, who receive Milliman's work and may include disclaimer language on its work product so stating. To the extent that Milliman's work is not subject to disclosure under applicable public records laws, the Department agrees that it shall not disclose Milliman's work product to third parties without Milliman's prior written consent; provided, however, that the Department may distribute Milliman's work to (i) its professional service providers who are subject to a duty of confidentiality and who agree to not use Milliman's work product for any purpose other than to provide services to the Department, or (ii) any applicable regulatory or governmental agency, as required.

In performing this analysis, we relied on data and other information provided by MassMutual. We have not audited or verified this data and other information. If the underlying data or information is inaccurate or incomplete, the results of our analysis may likewise be inaccurate or incomplete. In that event, the results of our analysis may not be suitable for the intended purpose. We performed a limited review of the data used directly in our analysis for reasonableness.



and consistency and have not found material defects in the data. If there are material defects in the data, it is possible that they would be uncovered by a detailed, systematic review and comparison of the data to search for data values that are questionable or for relationships that are materially inconsistent. Such a review was beyond the scope of our assignment.

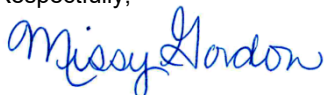
Differences between our projections and actual amounts depend on the extent to which future experience conforms to the assumptions made for this analysis. It is certain that actual experience will not conform exactly to the assumptions used in this analysis. Actual amounts will differ from projected amounts to the extent that actual experience deviates from expected experience.

I, Missy Gordon, am a Principal and Consulting Actuary for Milliman, Inc. I am a member of the American Academy of Actuaries and I meet the Qualification Standards of the American Academy of Actuaries to render an actuarial opinion as described herein.

❖❖❖

Bobby, thank you for working with us to complete this filing in Virginia. Please let me know if you have any additional questions. You can reach me directly at (952) 820-2478 or by e-mail at [missy.gordon@milliman.com](mailto:missy.gordon@milliman.com). Alternatively, you may contact Shawn Stender, the contact of record for this filing, at (952) 820-3104 or by e-mail at [shawn.stender@milliman.com](mailto:shawn.stender@milliman.com).

Respectfully,

A handwritten signature in blue ink that reads "Missy Gordon".

Missy Gordon, FSA, MAAA  
Principal and Consulting Actuary

MAG/ras

Enclosure: Revised Proposed Rate Tables

SERFF Post-Submission Update



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July 30, 2020

Bobby Toone  
Virginia Bureau of Insurance (Department)

*Via SERFF*

**Re: Massachusetts Mutual Life Insurance Company (MassMutual)**  
**Company NAIC # 65935**  
**SERFF Tracking # MILL-131569310**

<b>200 Series</b>	<b>Tax-Qualified Long-Term Care Policy Form</b>	<b>MM-200-P-VA et al.</b>
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	<b>Tax-Qualified Facility Only Long-Term Care Policy Form</b>	<b>MM501-P-1-VA et al.</b>

Dear Bobby:

Thank you for reviewing this filing. This letter is being submitted as part of an amendment in response to the phone conversation between representatives of the Department and Milliman on June 25, 2020 regarding the above-referenced filing.

We have spoken with the company regarding the multiple options to complete this filing, as outlined during our June 25 conversation. To expedite approval of this filing, the company respectfully requests to withdraw the June 16, 2020 amendment to revise the rate increase and to move forward with the original request as described in the August 30, 2018 initial submission cover letter. The company understands that this withdrawal will expedite the filing given that the originally requested rate increase has already completed actuarial review and was deemed actuarially justified. While the actuarial review is complete, we acknowledge that additional reviews are necessary to complete the filing.

Because a post-submission update was submitted as part of the June 16 amendment, we request that the Department disallow this pending post-submission update, such that the disposition reflects the originally requested rate level in Virginia.

Please note that in accepting the originally requested rate level in lieu of the larger rate increase described in the June 16 amendment, the company anticipates requesting additional rate increases in Virginia.

Offices in Principal Cities Worldwide

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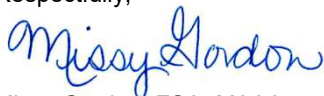
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Bobby, thank you for working with us to complete this filing in Virginia. Please let me know if you have any additional questions. You can reach me directly at (952) 820-2478 or by e-mail at [missy.gordon@milliman.com](mailto:missy.gordon@milliman.com). Alternatively, you may contact Shawn Stender, the contact of record for this filing, at (952) 820-3104 or by e-mail at [shawn.stender@milliman.com](mailto:shawn.stender@milliman.com).

Respectfully,

A handwritten signature in blue ink that reads "Missy Gordon".

Missy Gordon, FSA, MAAA  
Principal and Consulting Actuary

MAG/brw

**Please read this letter carefully and in its entirety. It contains important information about your long term care insurance policy.** Using the contact information at the end of this letter, you may contact your financial professional or our Long Term Care Administrative Office with any questions regarding this letter or your long term care insurance coverage.

8/12/2020

JOHN JONES  
123 A STREET  
RICHMOND, VA 12345

**RE: Notice of a Premium Increase to your Long Term Care Insurance Policy # 19 19000000 issued on 02/03/2003 in your Contract State of Virginia**

**Decision required by the Policy Anniversary Date: 02/3/2021**

Dear JOHN JONES,

MassMutual's purpose is to help people secure their future and protect the ones they love. One way in which we do this is by offering long term care insurance and ensuring that long term care insurance benefits will be available when our policyowners need them.

Your long term care insurance policy is an important component of your plans to help you maintain your financial independence and standard of living throughout your lifetime. When you purchased your policy, you made a wise decision to plan ahead so that you have options for your long term care needs if and when you may need them.

After a careful and thorough assessment, we have made the difficult decision to increase premium rates on many of our existing long term care insurance policies. To help you understand the need for this increase, please be aware that many factors have changed over the years that have impacted the pricing of long term care insurance policies. For example, the cost of long term care services continues to increase and today, people are living longer and the need for long term care is growing rapidly. Due to these types of changes, we now expect to pay higher amounts of benefits than had been originally anticipated. This anticipated increase in expected benefits has led to the need for us to increase premium rates. It is important to know that no individual or policy has been singled out due to a change in the insured's age, health, claims history, or any other individual characteristic.

The rate increase request was reviewed by the Virginia State Corporation Commission and was found to be compliant with applicable Virginia laws and regulations addressing long term care insurance. All premium rate filings are available for public inspection and may be accessed online through the Virginia State Corporation Commission's webpage at <https://scc.virginia.gov/boi/SERFFInquiry/LtcFilings.aspx>.

**Massachusetts Mutual Life Insurance Company**

Long Term Care Administrative Office

21600 Oxnard Street, Suite 1500 • Mailing Address: Post Office Box 4243

Woodland Hills, CA 91365-4243

(888) 505-8952 • (818) 887-4436 • Fax (818) 887-4595

As is common in the long term care insurance industry, MassMutual long term care insurance policies are guaranteed renewable. This means as long as you pay your premium, we cannot cancel or refuse to renew your policy, but we may increase premium rates. The regulatory process to implement a premium rate increase has been completed in your Contract State, and as a result, your policy is among others being impacted.

We understand that a premium increase may be difficult, and we are committed to helping you understand your options so that you can make the best decision for your personal situation.

### About this increase

The following grid provides information on your current (as of the Policy Anniversary Date) long term care insurance policy and details regarding the change to your policy's premium:

Benefit Period	Lifetime
Daily Benefit Amount	\$360.99
Elimination Period	90 Day
Inflation Protection	5% Compound
Your Old Annual Premium	\$3,869.87
Your New Annual Premium	\$5,181.74
Percentage Increase in Premium	33.89%
Effective Date of New Premium	02/03/2021 (Policy Anniversary Date)

**IMPORTANT NOTICE REGARDING WAIVER OF PREMIUM:** Your premium will increase on the Policy Anniversary Date of 02/03/2021 even while your policy's premium is being waived. Your current coverage will continue and your increased premium will continue to be waived. You will have the ability to reduce your coverage once your premiums are no longer waived. The Contingent Benefit Upon Lapse Option will only be available for the 120-day period as described later in this packet.

### Understanding your options

A Personalized Options Election Form and Instructions are being provided to you in this package, which outline the above options for reducing your coverage and the impact on your premium. **Additionally, options may not be of equal value and some options can reduce the new premium by more than others.** We recommend you review all options available to you, including paying the increased premium, with trusted family members, your financial professional and/or a member of our Long Term Care Administrative Office to help you determine the approach that is most appropriate for your needs.

As part of this rate increase, you have the right to request a new Benefit Schedule page.

You always have the option to continue your current coverage at the new premium. However, there may be several options available to you that will reduce your policy's premium, such as:

- **Reduce the Benefit Period (BP).** Reducing the BP will reduce the maximum length of time the policy will pay benefits and the total amount of benefits payable under your policy. Any daily, weekly, monthly or annual benefit limits would continue to apply.
- **Reduce the maximum Daily Benefit Amount (DBA).** Reducing the maximum DBA will reduce the maximum amount the policy will pay for covered expenses per day and the total amount of benefits

payable under your policy. This will also reduce any weekly, monthly or annual benefit amount limits available on the policy.

- **Extend the Elimination Period (EP).** Extending the EP increases the length of time you will be responsible for paying for long term care services before we will begin paying benefits.
- **Remove or reduce optional riders.** Removing or reducing an optional rider will mean you will no longer have or be eligible for the features and benefits that the rider provides. The following riders are attached to your policy:
  - Compound Inflation Protection Rider
  - HCBS Waiver of Premium Benefit Rider

Each option should be viewed in light of your individual needs and financial situation. By reducing the policy's benefits, you reduce the coverage available to pay for future care. You may not be able to increase your benefits at a later time, even if you offer to pay the increased premium amount.

You may also wish to contact the State Health Insurance Assistance Program (SHIP) located in your state, or the State Department/Bureau of Insurance if you need additional counseling to help determine how to proceed. Please go to [www.shiptacenter.org](http://www.shiptacenter.org) to find the nearest SHIP to you or [http://naic.org/state\\_web\\_map.htm](http://naic.org/state_web_map.htm) for information on how to contact your State Department/Bureau of Insurance.

### **Possible future changes**

It is possible that rates could increase again in the future. If they do, we will plan to follow a similar notification process.

### **What you need to do**

1. **If you want to keep your current coverage, simply pay your policy's new xxxxx premium by the Policy Anniversary Date of 02/03/2021. We do not need to hear from you, and you do not need to return the Personalized Options Election Form.**
2. **If you want to change your current coverage, complete and return the enclosed Personalized Options Election Form or otherwise submit your change request in writing by the Policy Anniversary Date of 02/03/2021.**
3. **If you decide not to continue coverage, complete and return the Personalized Options Election Form to choose the Contingent Benefit Upon Lapse option.**

**Note:** If we do not hear from you and you do not pay the new premium, your policy will be subject to lapse due to non-payment of premium. If the policy lapses due to non-payment of premium within the 120-day period as described later in this packet in the Contingent Benefit Upon Lapse option, then the policy will be converted to a paid-up policy under the Contingent Benefit Upon Lapse option.

**IMPORTANT NOTE ABOUT BILLING:** If we do not hear from you at least 50 days prior to the Policy Anniversary Date of 02/03/2021, your next bill will reflect the new premium based on your current coverage. However, as long as we receive your request to change coverage by the Policy Anniversary Date of 02/03/2021, we will

process your request effective as of that date, notify you of the new premium due, and refund excess premium paid, if any.

If your payment is made via a third-party account or online banking, please make appropriate arrangements to revise the payment amount.

The need for care can be one of the most significant challenges a person can face, both personally and financially. We have seen the difference that long term care insurance coverage has made in the lives of our customers and their family members. Although the cost for this insurance is increasing, it provides valuable coverage that may not be available from health insurance or government programs.

We recommend that you carefully review all the options available to you (including paying the rate increase and considering any available benefit reduction options) with trusted family members, a financial professional and/or a member of our Long Term Care Administrative Office to help you determine which option may be most appropriate.

We value your business and trust, and remain committed to helping you with your long term care needs. And we are here to help you.

Sincerely,



Amanda Wallace

Head of Insurance Operations

PS: Please retain a copy of this letter with your policy for future reference.

Enclosures: Instructions, Personalized Options Election Form

cc: AGENT NAME

Financial Professional	Massachusetts Mutual Life Insurance Co. Long Term Care Administrative Office
AGENT NAME (888) 800-8000	MassMutual Long Term Care Administrative Office 21600 Oxnard Street, Suite 1500 PO Box 4243 Woodland Hills, CA 91365  T: (888) 505-0394 Mon. - Fri., 5 AM to 5 PM PT

## **Important Information about the Contingent Benefit Upon Lapse Option**

If you decide not to pay the increased premiums associated with your long term care insurance policy, and your policy lapses within the 120 days following the Policy Anniversary Date of 02/03/2021, you may convert your policy to a paid-up status with reduced benefits and no future premiums will be due. Your policy must be paid up to the Policy Anniversary Date in order for this benefit to be available.

Continuing your coverage beyond 120 days after the Policy Anniversary Date of 02/03/2021 voids the Contingent Benefit Upon Lapse option.

The following terms apply to this option:

- Electing this option will not increase your coverage, which means the total benefits paid under the policy will never exceed the maximum benefits that would be payable had the policy remained in premium paying status.
- Subject to the above, your Benefit Amount will be reduced to the greater of the total of premiums paid for the policy and riders or 30 times the Daily Benefit Amount on the date of policy lapse.
- Benefits will be paid subject to the daily/weekly/monthly/annual benefit limits in effect on the date of policy lapse.
- No further benefit increases will occur under an inflation protection rider, if attached to the policy.
- Other than as described above, your coverage is subject to the same policy benefit provisions, Elimination Period, limitations and exclusions, and all other provisions of the policy and riders that were in effect on the date of policy lapse.

By exercising a Contingent Benefit Upon Lapse option, you may be significantly reducing your policy benefits. Therefore, careful consideration is strongly recommended.



## Instructions to complete the Personalized Options Election Form

The Personalized Options Election Form in this package outlines options available to you if you would like to explore adjusting your long term care insurance policy's new premium amount by reducing or removing benefits.

- This form may not include all options available to you. **Additionally, options may not be of equal value and some options can reduce the new premium by more than others.**
- Please review this form carefully on your own, with trusted family members, your financial professional and/or a member of our Long Term Care Administrative Office to help you determine which option may be most appropriate.
- To make changes to your policy, this form must be received in our long term care administrative office no later than the Policy Anniversary Date of 02/03/2021.
- Once we've processed the change you elected, we will send you a confirmation letter along with new policy specification pages to keep with your policy.
- **All policy change requests must be received in writing.**

Massachusetts Mutual Life Insurance Company

Long Term Care Administrative Office  
21600 Oxnard Street, Suite 1500 • Mailing Address: Post Office Box 4243  
Woodland Hills, CA 91365-4243  
(888) 505-0394 • Fax (818) 867-2503



## Personalized Options Election Form

Please return no later than the Policy Anniversary Date: **02/03/2021**

Prepared for: JOHN JONES

MassMutual Long Term Care Insurance Policy #: 19 19000000

**IMPORTANT: You can only choose one election on this form.** The new premium amounts shown are based on only one change taking effect on the Policy Anniversary Date of **02/03/2021**.

If you wish to request a change to your policy not listed on this form, or a combination of changes, please call your financial professional or our Long Term Care Administrative Office using the contact information at the end of this form.

### Reduce the Benefit Period

Current Benefit Period	Available Options	New Xxxxx Premium	Policy Change Election
Lifetime	6 Year	\$4,559.88	<input type="checkbox"/>
	4 Year	\$4,041.70	<input type="checkbox"/>
	3 Year	\$3,264.42	<input type="checkbox"/>

### Reduce the Daily Benefit Amount

Current Daily Benefit Amount as of XXXXX	Available Options	New Xxxxx Premium	Policy Change Election
\$360.99	\$288.79	\$4,145.39	<input type="checkbox"/>
	\$264.73	\$3,799.94	<input type="checkbox"/>

### Extend the Elimination Period

Current Elimination Period	Available Options	New Xxxxx Premium	Policy Change Election
90 Day	180 Day	\$4,663.55	<input type="checkbox"/>

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Woodland Hills, CA 91365-4243

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## Contingent Benefit Upon Lapse option

Contingent Benefit Upon Lapse option	Policy Change Election
<p>I want to discontinue paying premiums and convert my policy to paid-up status with reduced benefits. The Benefit Amount below is calculated based on premium and benefits paid as of 05/04/2020. The Daily Benefit Amount below is as of 02/03/2021. The actual values will be calculated based on the date of policy lapse.</p> <p>The new Benefit Amount is \$69,773.71 and the new Daily Benefit Amount is \$360.99.</p>	<input type="checkbox"/>

**You have up until the Policy Anniversary Date of 02/03/2021 to make or modify any changes you elect on this form. In order to elect the Contingent Benefit Upon Lapse option, your policy must be paid to the Policy Anniversary Date.**

By signing below, I agree that any change(s) will be effective on the Policy Anniversary Date of 02/03/2021 provided this form is received at our Long Term Care Administrative Office by that date.

**Name of Policyowner:** JOHN JONES  
**Name of Insured:** JOHN JONES  
**Policy #:** 19 19000000

**Signature of Policyowner:** \_\_\_\_\_

**Date:** \_\_\_\_\_

Please return this form using the enclosed postage-paid envelope.

Financial Professional	Massachusetts Mutual Life Insurance Co. Long Term Care Administrative Office
AGENT NAME (888) 800-8000	MassMutual Long Term Care Administrative Office 21600 Oxnard Street, Suite 1500 PO Box 4243 Woodland Hills, CA 91365 T: (888) 505-0394 Mon. - Fri., 5 AM to 5 PM PT



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September 23, 2020

Bobby Toone  
Virginia Bureau of Insurance (Department)

Via SERFF

**Re: Massachusetts Mutual Life Insurance Company (MassMutual)**  
**Company NAIC # 65935**  
**SERFF Tracking # MILL-131569310**

<b>200 Series</b>	<b>Tax-Qualified Long-Term Care Policy Form</b>	<b>MM-200-P-VA et al.</b>
<b>300 Series</b>	<b>Tax-Qualified Long-Term Care Policy Form</b>	<b>MM-300-P-VA et al.</b>
<b>400 Series</b>	<b>Tax-Qualified Long-Term Care Policy Form</b>	<b>MM-400-P-VA et al.</b>
<b>500 Series</b>	<b>Tax-Qualified Comprehensive Long-Term Care Policy Form</b>	<b>MM500-P-VA et al.</b>
	<b>Tax-Qualified Facility Only Long-Term Care Policy Form</b>	<b>MM501-P-VA et al.</b>
<b>511 Series</b>	<b>Tax-Qualified Comprehensive Long-Term Care Policy Form</b>	<b>MM500-P-1-VA et al.</b>
	<b>Tax-Qualified Facility Only Long-Term Care Policy Form</b>	<b>MM501-P-1-VA et al.</b>

Dear Bobby:

Thank you for reviewing this filing. This letter is in response to your letter dated August 25, 2020 regarding the information needed for the above-referenced filing. The remainder of this letter provides the additional information requested in your August 25 letter. The requests are restated in italics for reference.

- 1. As the minimum projected premium in this spreadsheet, is \$131 correct as an annual premium? Without providing any personal policyholder information, please provide the level of benefits that would be included in that premium level, including daily benefits, lifetime benefits, etc.*

The projected annual premium of \$131 is correct. Attachment A-i to this letter provides the base premium rates, premium rating factors, discounts, modal factors, and final premium rates for the current and proposed premium levels. It also demonstrates how the current and proposed rates are calculated from the rate tables. As shown in Attachment A-i, the policyowner has very lean benefits, a covered partner discount, and an issue age of 50, which result in the low annual premium.

Offices in Principal Cities Worldwide

This work product was prepared solely to provide assistance to MassMutual. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends recipient be aided by its own actuary or other qualified professional when reviewing the Milliman work product.

2. As the maximum projected premium listed, please show how an annual premium of \$46,859 is reasonable in relation to the benefits received. This would also include the types of benefits listed in the previous question.

Attachment A-ii to this letter provides this information for the current and proposed premium levels. As shown in Attachment A-ii, the policyowner has rich benefits (e.g., high daily benefit, compound inflation protection, and lifetime benefit period) and a limited payment period (10 years), which result in high annual premium. This policy recently reached the end of their premium payment period, so they will no longer be affected by this rate increase.

3. Provide the same information requested above for projected annual premiums of \$3,374 (VA Policyholder count no. 4125) and \$12,137 (VA Policyholder count no. 2969).

Attachments A-iii and A-iv to this letter provide this information for the current and proposed premium levels. Note that Attachment A-iv is a joint policy and the proposed \$12,137 premium reflects the annual premium for each individual.

4. Please provide actuarial justification for this range of increases in addition to bringing premiums in line with the 513 series of policies.

The rate increase was determined to achieve a rate level consistent with that on the company's recently marketed 513 Series product. Thus, the resulting rate increase varies by rate series and all available options and riders. This rate increase is then capped on a seriatim basis such that no insured will receive a rate increase in excess of 100%. This methodology is described in additional detail in the cover letter and Section 2 of the actuarial memorandum dated August 30, 2018.

Capping the rate increase based on the 513 Series rate for a given insured results in higher average increases for richer benefits and younger issue ages, as shown in the seriatim listing provided on November 4, 2019. The following tables demonstrate how using the variation of the 513 Series rates helps tailor the rate increase for each subset of policies as older policies and policies with richer benefits have higher actual-to-expected (A:E) ratios and receive higher rate increases. These tables provide A:E ratios of lifetime loss ratios using current and original pricing assumptions as well as the average requested rate increase. Values in the following tables are shown by series, inflation option, and benefit period.

**Actual-to-Expected Lifetime Loss Ratios and Average Rate Increase Request  
Nationwide Policies by Series and Benefit Period without Inflation Protection**

Series	Non-Lifetime Benefit Period			Lifetime Benefit Period		
	Before Increase A:E <sup>[1]</sup>	After Increase A:E <sup>[1]</sup>	Average Requested Increase	Before Increase A:E <sup>[1]</sup>	After Increase A:E <sup>[1]</sup>	Average Requested Increase
All	1.35	1.20	37%	2.03	1.64	77%
200	1.63	1.49	49	2.18	1.80	88
300	1.40	1.25	50	1.94	1.55	90
400	1.44	1.24	47	1.82	1.38	89
500	1.27	1.09	35	2.14	1.75	50
511	1.07	0.97 <sup>[2]</sup>	16	1.81	1.63	20

<sup>[1]</sup> Actual experience is using current interest assumption on a basis that is consistent with original pricing described in Section 6 of the actuarial memorandum dated August 30, 2018. Expected experience is based on projected actual policies sold from issue using original pricing assumptions.

<sup>[2]</sup> While this A:E ratio is below 1.00, we note that there is limited credibility on this cohort of business.

**Actual-to-Expected Lifetime Loss Ratios and Average Rate Increase Request  
Nationwide Policies by Series and Benefit Period with Inflation Protection**

Series	Non-Lifetime Benefit Period			Lifetime Benefit Period		
	Before Increase A:E <sup>[1]</sup>	After Increase A:E <sup>[1]</sup>	Average Requested Increase	Before Increase A:E <sup>[1]</sup>	After Increase A:E <sup>[1]</sup>	Average Requested Increase
All	1.82	1.37	61%	3.13	2.31	93%
200	2.26	1.73	82	3.51	2.62	99
300	2.18	1.61	86	3.40	2.54	99
400	1.80	1.36	70	2.60	1.89	97
500	1.87	1.37	66	2.70	1.94	84
511	1.35	1.11	31	1.85	1.54	40

[1] Actual experience is using current interest assumption on a basis that is consistent with original pricing described in Section 6 of the actuarial memorandum dated August 30, 2018. Expected experience is based on projected actual policies sold from issue using original pricing assumptions.

5. Provide an exhibit demonstrating how a premium is developed from the proposed rate sheets provided, including examples from the highest premium level, the lowest level, and some from the middle range.

Attachment A to this letter demonstrates how the premium for the selected policies is developed using the proposed rate sheets. Actual rates implemented may vary from those in Attachment A due to implementation rounding algorithms.

### Limitations and Qualifications

Milliman's work has been prepared for the use and benefit of MassMutual. Milliman's work may not be provided to third parties without Milliman's prior written consent. Milliman does not intend to benefit any third party recipient of its work product, even if Milliman consents to the release of its work product to such third party.

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In performing this analysis, we relied on data and other information provided by MassMutual. We have not audited or verified this data and other information. If the underlying data or information is inaccurate or incomplete, the results of our analysis may likewise be inaccurate or incomplete. In that event, the results of our analysis may not be suitable for the intended purpose. We performed a limited review of the data used directly in our analysis for reasonableness and consistency and have not found material defects in the data. If there are material defects in the data, it is possible that they would be uncovered by a detailed, systematic review and comparison of the data to search for data values that are questionable or for relationships that are materially inconsistent. Such a review was beyond the scope of our assignment.

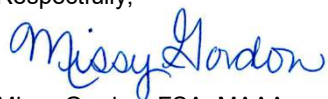
Differences between our projections and actual amounts depend on the extent to which future experience conforms to the assumptions made for this analysis. It is certain that actual experience will not conform exactly to the assumptions used in this analysis. Actual amounts will differ from projected amounts to the extent that actual experience deviates from expected experience.

I, Missy Gordon, am a Principal and Consulting Actuary for Milliman, Inc. I am a member of the American Academy of Actuaries and I meet the Qualification Standards of the American Academy of Actuaries to render an actuarial opinion as described herein.

❖❖❖

Bobby, thank you for working with us to complete this filing in Virginia. Please let me know if you have any additional questions. You can reach me directly at (952) 820-2478 or by e-mail at [missy.gordon@milliman.com](mailto:missy.gordon@milliman.com). Alternatively, you may contact Shawn Stender, the contact of record for this filing, at (952) 820-3104 or by e-mail at [shawn.stender@milliman.com](mailto:shawn.stender@milliman.com).

Respectfully,



Missy Gordon, FSA, MAAA  
Principal and Consulting Actuary

MAG/brw

Attachment A: Sample Rate Increase Calculations

**Attachment A-i**  
**Massachusetts Mutual Life Insurance Company**  
**Long-Term Care Policy Rating Example**  
**Policy Form MM500-P-VA**  
**500 Series, Issue Age 50, Facility Only Lifetime Payment Policy,**  
**\$50 Daily Benefit, 2-Year Benefit Period, and**  
**180-Day Elimination Period, No Inflation**

		<b>Current</b>	<b>Proposed<sup>[1]</sup></b>
<b>(A)</b>	<b>Base Premium Rate</b>	\$81.3000	\$103.4600
<b>Premium Rating Factors (if None, then 1.00)</b>			
(B)	Number of \$10 Increments (\$50/day)	5	5
(C)	Inflation Option Factor (None)	1.0000	1.0000
(D)	Limited Payment Option or Paid-Up Survivor Rider Factor (None)	1.0000	1.0000
(E)	Nonforfeiture Rider Factor (None)	1.0000	1.0000
(F)	Return of Premium Rider Factor (None)	1.0000	1.0000
(G)	Waiver of Premium for Covered Partner Rider Factor (None)	1.0000	1.0000
(H)	Partner/Covered Partner Discount Factor (Covered Partner)	0.6500	0.7000
(I)	Multi-Life Discount Factor (None)	1.0000	1.0000
(J)	Multi-Product Discount Factor (None)	1.0000	1.0000
(K)	Underwriting Class Factor (Ultra Preferred)	0.8500	0.9000
(L)	Benefit Type Factor (Daily Reimbursement)	1.0000	1.0000
(M)	Elimination Period (EP) Factor (180 Days)	0.8800	0.9000
(N)	Elimination Period Rider Factor (None)	1.0000	1.0000
(O)	Benefit Period (BP) Factor (2 Years)	0.4400	0.4470
(P)	Restoration of Benefits Rider Factor (None)	1.0000	1.0000
(Q)	Shared Care Rider Factor (None)	1.0000	1.0000
(R)	Modal Factor (Annual)	1.0000	1.0000
(S)	Discounted Renewal Premium Factor (None)	1.0000	1.0000
(T)	Product of Premium Rating Factors = (B) x (C) x (D) x (E) x (F) x (G) x (H) x (I) x (J) x (K) x (L) x (M) x (N) x (O) x (P) x (Q) x (R) x (S) (Unrounded)	1.0696	1.2672
<b>(U)</b>	<b>Final Modal Premium = (A) x (T) (Round to 2 decimal places)</b>	\$86.96	\$131.11
<b>(V)</b>	<b>Proposed Percentage Increase (Minimum of 513 Series rates and 100% increase)</b>		50.8%
<b>(W)</b>	<b>Proposed Premium Rate (Current U) x (V)</b>		\$131.11

[1] Factors reflect the 513 Series rates. If applicable, the 100% rate increase cap is applied at item (V).



**Attachment A-ii**  
**Massachusetts Mutual Life Insurance Company**  
**Long-Term Care Policy Rating Example**  
**Policy Forms MM500-P-VA**  
**500 Series, Issue Age 50, Comprehensive 10-Year Payment Policy,**  
**\$250 Daily Benefit, Lifetime Benefit Period, 30-Day Elimination Period, and**  
**5% Compound Inflation, with Monthly Home and Community Based Services (HCBS) Rider**

		<b>Current</b>	<b>Proposed<sup>[1]</sup></b>
<b>(A)</b>	<b>Base Premium Rate</b>	\$95.6000	\$117.0400
<b>(B)</b>	<b>Premium Rating Factors (if None, then 1.00)</b>		
	Number of \$10 Increments (\$250/day)	25	25
<b>(C)</b>	Inflation Option Factor (5% Compound)	2.5530	4.2900
<b>(D)</b>	Limited Payment Option or Paid-Up Survivor Rider Factor (10 Year)	2.9090	2.9090
<b>(E)</b>	Nonforfeiture Rider Factor (None)	1.0000	1.0000
<b>(F)</b>	Return of Premium Rider Factor (None)	1.0000	1.0000
<b>(G)</b>	Waiver of Premium for Covered Partner Rider Factor (None)	1.0000	1.0000
<b>(H)</b>	Partner/Covered Partner Discount Factor (None)	1.0000	1.0000
<b>(I)</b>	Multi-Life Discount Factor (None)	1.0000	1.0000
<b>(J)</b>	Multi-Product Discount Factor (None)	1.0000	1.0000
<b>(K)</b>	Underwriting Class Factor (Select Preferred)	1.0000	1.0000
<b>(L)</b>	Benefit Type Factor (Monthly HCBS Rider)	1.1000	1.0450
<b>(M)</b>	Elimination Period (EP) Factor (30 Days)	1.2000	1.2000
<b>(N)</b>	Elimination Period Rider Factor (None)	1.0000	1.0000
<b>(O)</b>	Benefit Period (BP) Factor (Lifetime)	1.0000	1.0660
<b>(P)</b>	Restoration of Benefits Rider Factor (None)	1.0000	1.0000
<b>(Q)</b>	Shared Care Rider Factor (None)	1.0000	1.0000
<b>(R)</b>	Modal Factor (Annual)	1.0000	1.0000
<b>(S)</b>	Discounted Renewal Premium Factor (None)	1.0000	1.0000
<b>(T)</b>	Product of Premium Rating Factors = (B) x (C) x (D) x (E) x (F) x (G) x (H) x (I) x (J) x (K) x (L) x (M) x (N) x (O) x (P) x (Q) x (R) x (S) (Unrounded)	245.0803	417.0573
<b>(U)</b>	<b>Final Modal Premium = (A) x (T) (Round to 2 decimal places)</b>	\$23,429.68	\$48,812.39
<b>(V)</b>	<b>Proposed Percentage Increase (Minimum of 513 Series rates and 100% increase)</b>		100.0%
<b>(W)</b>	<b>Proposed Premium Rate (Current U) x (V)</b>		\$46,859.36

[1] Factors reflect the 513 Series rates. If applicable, the 100% rate increase cap is applied at item (V).

**Attachment A-iii**  
**Massachusetts Mutual Life Insurance Company**  
**Long-Term Care Policy Rating Example**  
**Policy Form MM500-P-VA**  
**500 Series, Issue Age 60, Comprehensive Lifetime Payment Policy,**  
**\$200 Daily Benefit, 4-Year Benefit Period, 180-Day Elimination Period, and**  
**3% Compound Inflation, Shared Care Rider**

		<b>Current</b>	<b>Proposed<sup>[1]</sup></b>
<b>(A)</b>	<b>Base Premium Rate</b>	\$144.6000	\$187.4700
<b>(B)</b>	<b>Premium Rating Factors (if None, then 1.00)</b>		
(B)	Number of \$10 Increments (\$200/day)	20	20
(C)	Inflation Option Factor (3% Compound)	1.7150	1.7630
(D)	Limited Payment Option or Paid-Up Survivor Rider Factor (None)	1.0000	1.0000
(E)	Nonforfeiture Rider Factor (None)	1.0000	1.0000
(F)	Return of Premium Rider Factor (None)	1.0000	1.0000
(G)	Waiver of Premium for Covered Partner Rider Factor	1.0210	1.0100
(H)	Partner/Covered Partner Discount Factor (Covered Partner)	0.6500	0.7000
(I)	Multi-Life Discount Factor (None)	1.0000	1.0000
(J)	Multi-Product Discount Factor (Loyal Customer)	0.9500	0.9500
(K)	Underwriting Class Factor (Ultra Preferred)	0.8500	0.9000
(L)	Benefit Type Factor (Monthly HCBS Rider)	1.1000	1.0450
(M)	Elimination Period (EP) Factor (180 Days)	0.8800	0.9000
(N)	Elimination Period Rider Factor (Enhanced EP)	1.0800	1.0750
(O)	Benefit Period (BP) Factor (4 Years)	0.6000	0.6130
(P)	Restoration of Benefits Rider Factor (None)	1.0000	1.0000
(Q)	Shared Care Rider Factor	1.3700	1.2900
(R)	Modal Factor (Monthly - PAC)	0.0880	0.0880
(S)	Discounted Renewal Premium Factor (None)	1.0000	1.0000
<b>(T)</b>	<b>Product of Premium Rating Factors = (B) x (C) x (D) x (E) x (F) x (G) x (H) x (I) x (J) x (K) x (L) x (M) x (N) x (O) x (P) x (Q) x (R) x (S) (Unrounded)</b>	1.3900	1.4996
<b>(U)</b>	<b>Final Monthly Modal Premium = (A) x (T) (Round to 2 decimal places)</b>	\$201.00	\$281.13
<b>(V)</b>	<b>Final Annualized Modal Premium = (U) x (12) (Round to 2 decimal places)</b>	\$2,412.00	\$3,373.56
<b>(W)</b>	<b>Proposed Percentage Increase (Minimum of 513 Series rates and 100% increase)</b>		39.9%
<b>(X)</b>	<b>Proposed Premium Rate (Current V) x (W)</b>		\$3,373.56

[1] Factors reflect the 513 Series rates. If applicable, the 100% rate increase cap is applied at item (V).

**Attachment A-iv**  
**Massachusetts Mutual Life Insurance Company**  
**Long-Term Care Policy Rating Example**  
**Policy Form MM-400-P-VA**  
**400 Series, Joint Policy, Oldest Issue Age 70, Comprehensive Lifetime Payment Policy,**  
**\$170 Daily Benefit, Lifetime Benefit Period, and**  
**90-Day Elimination Period, 5% Compound Inflation**

		<b>Current</b>	<b>Proposed<sup>[1]</sup></b>
(A)	<b>Base Premium Rate</b>	\$270.0000	\$421.0100
	<b>Premium Rating Factors (if None, then 1.00)</b>		
(B)	Number of \$10 Increments (\$170/day)	17	17
(C)	Inflation Option Factor (5% Compound)	1.7500	2.0600
(D)	Limited Payment Option or Paid-Up Survivor Rider Factor (None)	1.0000	1.0000
(E)	Nonforfeiture Rider Factor (None)	1.0000	1.0000
(F)	HCBS Premium Waiver Rider Factor (None)	1.0000	1.0000
(G)	Multi-Life Discount Factor (None)	1.0000	1.0000
(H)	Joint Policy Factor	1.3000	1.3000
(I)	Underwriting Class Factor (1 Preferred and 1 Standard)	1.1250	1.1250
(J)	Benefit Type (Daily Reimbursement)	1.0000	1.0000
(K)	Elimination Period (EP) Factor (90 Days)	1.0000	1.0000
(L)	HCBS First Day of Coverage Rider Factor (None)	1.0000	1.0000
(M)	Benefit Period (BP) Factor (Lifetime)	1.0000	1.0660
(N)	Restoration of Benefits Rider Factor (None)	1.0000	1.0000
(O)	Limited Family Caregiver Rider Factor (None)	1.0000	1.0000
(P)	Modal Factor (Monthly - PAC)	0.0880	0.0880
(Q)	Discounted Renewal Premium Factor (None)	1.0000	1.0000
(R)	Product of Premium Rating Factors = (B) x (C) x (D) x (E) x (F) x (G) x (H) x (I) x (J) x (K) x (L) x (M) x (N) x (O) x (P) x (Q) (Unrounded)	3.8288	4.8045
(S)	<b>Final Joint Monthly Modal Premium = (A) x (R) (Round to 2 decimal places)</b>	\$1,033.78	\$2,022.76
(T)	<b>Final Joint Annualized Modal Premium = (S) x (12) (Round to 2 decimal places)</b>	\$12,405.36	\$24,273.12
(U)	<b>Proposed Percentage Increase (Minimum of 513 Series rates and 100% increase)</b>		95.7%
(V)	<b>Proposed Joint Premium Rate (Current T) x (U)</b>		\$24,273.12
(W)	<b>Proposed Premium Rate for Individual Insured (V) / (2)</b>		\$12,136.56

[1] Factors reflect the 513 Series rates. If applicable, the 100% rate increase cap is applied at item (V).